

MEMORANDUM

DETAILS

DATE: March 6, 2025

TO: T & L Carroll Holdings Inc.

FROM: Ivan Dzeperoski, M. Eng., P.Eng., Robinson Consultants Inc.

SUBJECT: Carroll Industrial Subdivision – Water Balance Model

1.0 BACKGROUND

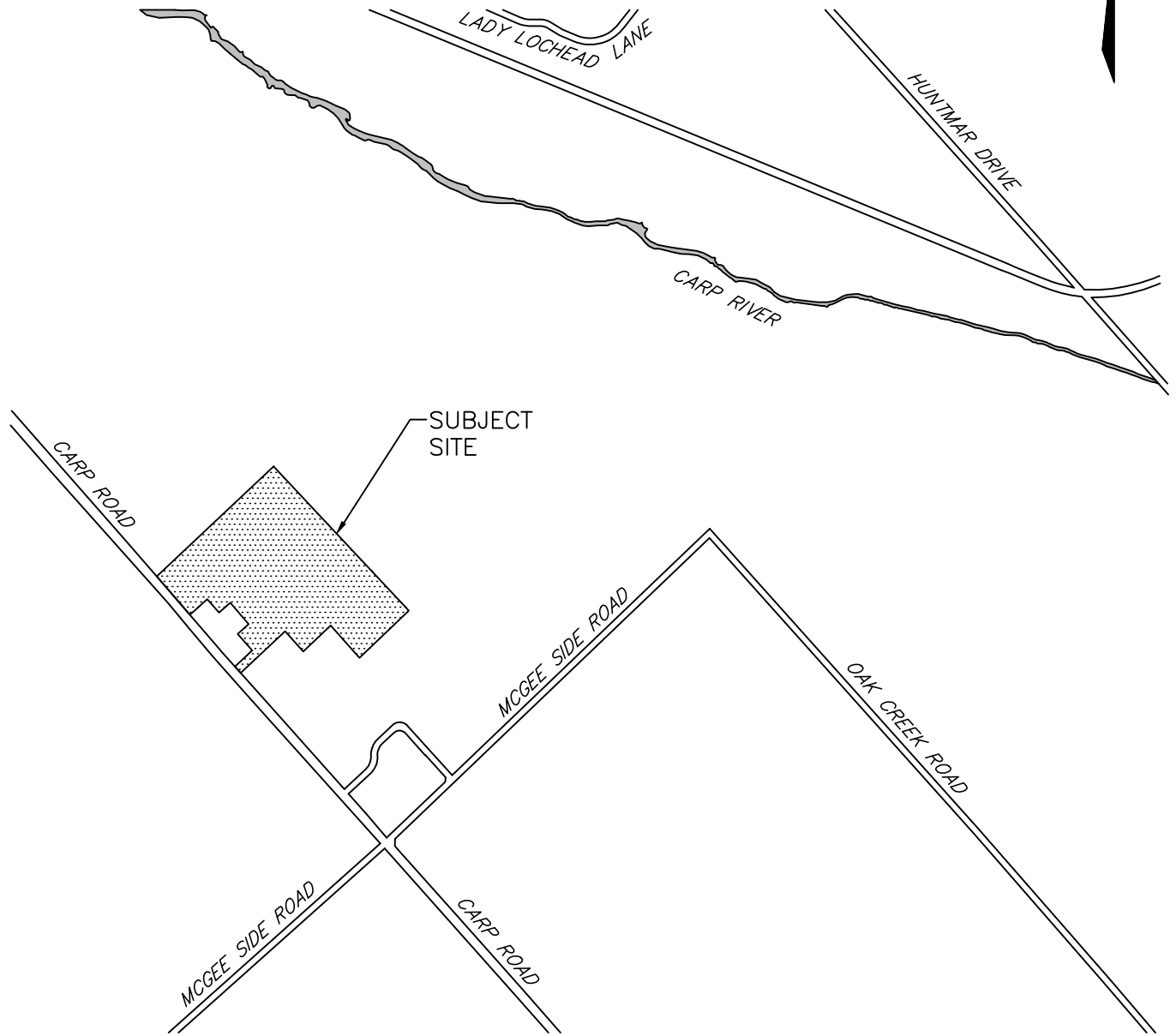
Robinson Consultants Inc (RCI) has been retained by T & L Carroll Holdings Inc. to complete a water balance analysis for the proposed rural industrial/commercial subdivision located at 3160 Carp Road in the City of Ottawa. The subject site (herein referred to as the Carroll Subdivision) is 21.5 hectares in area and is zoned rural commercial subzone 9 (RC9 – Highway Commercial). The site is bound by commercial properties to the west, north, and south, and agricultural land to the east (refer to **Figure 1** for site location plan).

The site lies within the Carp River Watershed and the Mississippi Valley Source Protection Area, with roughly half of the property within the boundary of a highly vulnerable aquifer, as indicated by source protection mapping. Currently, the site is undeveloped with minimal tree coverage and terrain slopes from west to east. Several drainages feature on the property capture and direct surface runoff. An existing watercourse is situated at the easternmost edge of the site, flowing northeast and ultimately discharging into the Carp River, approximately 1,550 meters downstream.

The purpose of this memorandum is to present the assumptions and simulation results of hydrological water balance analysis.

2.0 WATER BUDGET MODELING

To assess the water budget for the site under pre- and post-development conditions a continuous PCSWMM model was developed. The model incorporates both hydrological and groundwater processes to simulate the movement and distribution of water within the study area. The model was using 51 years of hourly rainfall data from the Ottawa CDA Weather Station for the period from 1960 up to and including 2010. Hourly rainfall is only available during the warm season, usually April to October. This element is measured by tipping bucket rain gauge. A time stamp is recorded every time that 0.2 mm of rainfall is received. This data is analyzed to calculate the hourly values. The data was purchased from the Meteorological Service of Canada, which is part of Environment and Climate Change Canada. It should be noted that outside the April-November window precipitation is more likely to be in the form of snowfall and the soil is also more likely to be frozen, making it difficult to simulate such conditions with a hydrological model using conventional City parameters. Therefore, the snow melt was not considered in the analysis.



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Land Development

scale	N.T.S.	CARROLL SUBDIVISION	project no.	24104
date	06/03/25		KEY PLAN	FIG 1.0
drawn by	BLM			

The analysis considered other hydrological parameters, such as temperature, evaporation, surface storage and infiltration. As mentioned above, the precipitation data was entered as a time series of rainfall values while for evaporation monthly average values were used for the Ottawa CDA weather station. The runoff was modeled using the Soil Conservation Service Curve Number method (SCS method), which accounts for land use, soil type and vegetation cover. In addition, groundwater parameters such as depth to the water table, hydraulic conductivity, and soil permeability were incorporated to model groundwater flow. The interaction between surface water and groundwater was considered in the model ensuring a comprehensive analysis of the water balance model under both pre- and post-development conditions.

2.1 MODELING PARAMETERS

2.1.1 Soil Infiltration Rate

Based on the Geotechnical Report, Hydrogeological Investigation & Terrain Analysis Proposed Industrial Subdivision 3160 Carp Road', dated August 9, 2024, and prepared by GEMTEC, the soils within the site boundaries belong to a Type 'B' and Type 'D' hydrologic soil group (HSG) as shown on **Figure A-1 in Appendix A** (an excerpt from the Geotechnical Report). The soils that belong to HSG 'B' have moderate infiltration rates while soils that belong to HSG 'D' have high runoff potential and very slow infiltration rates. Based on the geotechnical investigation results the calculated saturated field hydraulic conductivity ranged from 1.1×10^{-2} cm/s to 1.1×10^{-5} cm/s, where the corresponding infiltration rates ranged from 26 mm/hr to 163 mm/hr for HSG type 'D' and type 'B', respectively.

2.1.2 SCS Curve Number (CN)

Rainfall and infiltration losses within the sub-catchment area were estimated using the SCS method, which is commonly used to predict runoff based on land use, soil type, and hydrologic conditions. The SCS method first considers the total rainfall depth and then calculates the initial loss, which includes both interception and infiltration. The curve number (CN) is a key factor in determining the amount of runoff where lower CN values correspond to less runoff (e.g., areas with good vegetation or permeable soils) and higher CN values indicate more runoff (e.g., impervious or urbanized areas). Infiltration losses are calculated based on the relationship between the total rainfall and the CN, where the runoff potential increases as the CN increases, reflecting the reduced ability of the soil to absorb water under wetter conditions. The remaining precipitation after accounting for infiltration losses is then routed as surface runoff, contributing to the overall water balance in the sub-catchment.

CN values for each catchment area under both pre- and post-development conditions were calculated using data on the hydrological soils group classification (as outlined in the Geotechnical Report), land use and cover to calculate the direct runoff and infiltration from excess rainfall. The CN values for each identified HSG type within the site area are presented in **Appendix B**. The representative CN value for subcatchment areas was calculated using the weighted average method in PCSWMM and values for identified HSG groups. The following tables, *Table 1* and *Table 2* provide a summary of calculated CN values for subcatchment areas under pre- and post-development conditions:

Table 1: CN Values for Sub-catchment Areas under Pre-development Conditions

Catchment ID	CN
S1_D	91
S2_D	89
S1_B	77
S2_B	83

Table 2: CN Values for Sub-catchment Areas under Post-development Conditions

Catchment ID	CN
BLCK-2	64
BLCK-2R	61
BLCK-3	78
BLCK-3R	73
BLCK-4	80
BLCK-4R	80
BLCK-5	80
BLCK-5R	80
BLCK-6	80
BLCK-6R	80
BLCK-7	67
BLCK-7R	80
BLCK-8	61
BLCK-9	79
BLCK-10	80
BLCK-11	68
BLCK-12	62

It should be noted that, for CN values under post-development conditions the assumption was made that all pervious surfaces were developed as open space surfaces with good hydrological condition and grass cover greater than 75%.

2.1.3 Initial Abstraction

The initial abstraction parameter represents an initial loss of the rainfall volume, which is a function of the CN value and the soil's maximum retention (S). The retention potential is estimated using the following formula:

$$S = \frac{25400}{CN} - 254$$

After the retention potential is calculated, the initial abstraction is calculated based on the relationship between the CN value and soil retention potential as follows:

- $I_A = 0.075 \times S$, for $CN \leq 70$
- $I_A = 0.10 \times S$, for $70 < CN < 80$
- $I_A = 0.15 \times S$, for $80 < CN < 90$, and

- $I_A = 0.20 \times S$, for $CN > 90$

Table 3 below provides a summary of information on calculated values for soil (S) and I_A for each catchment area under pre-development conditions while detailed calculations can be found in **Appendix B**.

Table 3: Soil Retention Potential and Initial Abstraction Calculation

Area ID	CN	Soil Retention Potential (S)	Initial Abstraction I_A (mm)
S1_D	91	25	5.1
S2_D	89	31	4.7
S1_B	77	74	7.4
S2_B	83	52	7.8

Under post-development conditions, typical values for I_A for pervious and impervious surfaces, of 4.67 mm and 1.57 mm, respectively, have been used as per the City of Ottawa Sewer Design Guidelines.

2.1.4 Groundwater Modeling – Aquifer Parameters

Groundwater modeling in PCSWMM involves simulating the movement and behavior of groundwater within a given area, typically in conjunction with surface water runoff. This modeling helps assess the impact of stormwater infiltration, recharge, and drainage on the groundwater table and can be crucial for designing effective stormwater management systems. The necessary parameters for groundwater modeling in PCSWMM typically include the following:

Table 4: Aquifer Parameters for Groundwater Modeling

Parameter	Description	HSG Type 'B'	HSG Type 'D'
Porosity	Volume of voids / total soil volume (volumetric fraction) in the aquifer.	0.466	0.517
Wilting Point	Aquifer soil moisture content at which plants cannot survive.	0.047	0.285
Field Capacity	Aquifer soil moisture content after all free water has drained off.	0.084	0.417
Conductivity ¹	Soil's saturated hydraulic conductivity.	122.85	2.78
Conductivity slope	Average slope of log (conductivity) versus soil moisture deficit.	38	44
Upper Evap. Fraction	Fraction of total evaporation available for evapotranspiration in the upper unsaturated zone.	0.8	0.8
Lower Evap. Depth	Maximum depth below the surface at which evapotranspiration from the lower saturated zone can still occur.	1.5	5.5
Lower GW Loss Rate	Rate of seepage to deep groundwater when aquifer is completely saturated.	0.004	0.004
Bottom elevation	Elevation of the bottom of the aquifer.	106.6	109.2
Water Table Elevation	Elevation of the water table in the aquifer at the start of the simulation.	112.3	111.2

Unsaturated Zone Moisture	Moisture content of the unsaturated upper zone of the aquifer at the start of the simulation.	0.22	0.35
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The values for hydraulic conductivity, bottom aquifer elevation, and water table elevation were measured in the field during the geotechnical investigation at seven (7) borehole locations (see **Appendix A** for the borehole location plan, an excerpt from the Geotechnical Report). The values provided in the table above for these parameters are averages based on the measurements from the boreholes within the respective hydrological soil groups.

The remaining parameters in Table 4 were determined based on the measured hydraulic conductivity and a review of available groundwater modeling information from Section 5 of the EPA's Storm Water Management Model Reference Manual Volume I – Hydrology (Revised), January 2016, and regression estimates of soil moisture limits from the Soil, Plant, Atmosphere, and Water (SPA) calculator. Values for conductivity slope and lower evapotranspiration depth were estimated using Tables 5-9 and 5-10 from this manual.

It should be noted that, under post-development conditions, for the areas of the site covering two identified hydrologic soil groups, the groundwater modeling parameters were determined using a weighted average, based on the proportion of the area associated with each soil group.

3.0 WATER BALANCE MODELING SCENARIOS

Three water balance scenarios were analyzed to assess the potential impact of the proposed development on infiltration and groundwater recharge rates. The first scenario involved pre-development conditions, where the water balance was calculated without any development, to establish the existing infiltration and recharge rates.

The second scenario simulated proposed development with a 40% increase of imperviousness, which aligns with the maximum allowed percentage of hard surfaces per site, as outlined in GEMTEC's hydrogeological study. This scenario is intended to quantify the reduction in recharge due to the increase in impervious areas and change in land use.

The third scenario simulated the proposed development incorporating low impact development (LID) measures. It was assumed that the proposed roadside ditches and rear yard swales would be designed as vegetated swales, with each site implementing infiltration measures to achieve a 70% TSS removal rate. These proposed measures are expected to offset the loss of infiltration and help maintain or improve the recharge rates.

3.1 SIMULATION RESULTS

The simulation results for the annual average water balance under pre-development conditions, post-development conditions without LID measures, and post-development conditions with LID measures are summarized in Table 5, Table 6, and Table 7 below. The results are presented as average values in m³/year, mm/year, and as a percentage (%) of total annual rainfall.

Table 5: Simulation Results of Water Balance Model under Pre-Development Conditions

Annual Average Volume	Precipitation	Total Evaporation	Infiltration	Runoff
mm	500	99	337	64
m ³	163,240	32,390	109,903	20,948
%	100	19.8	67.4	12.8

Table 6: Simulation Results of Water Balance Model under Post-Development Conditions without LID Measures

Annual Average Volume	Precipitation	Total Evaporation	Infiltration	Runoff
mm	500	98	313	89
m ³	163,240	31,954	102,288	29,130
%	100	19.6	62.6	17.8

Table 7: Simulation Results of Water Balance Model under Post-Development Conditions with LID Measures

Annual Average Volume	Precipitation	Total Evaporation	Infiltration	Runoff
mm	500	94	352	55
m ³	163,240	30,644	114,851	17,901
%	100	18.8	70.4	11.0

According to the simulation results, under pre-development conditions, the overall evaporation from the site and adjacent area is approximately 20%, infiltration is approximately 68%, and total runoff is approximately 13% of the annual rainfall. Under post-development conditions, without considering any LID measures, evaporation will account for approximately 20%, infiltration will be 63%, and total runoff will be 18% of the annual rainfall. Under post-development conditions, with the inclusion of vegetated swales and infiltration trenches at each site, the average annual infiltration volume will be 352 mm/yr, which represents approximately 70% of the annual rainfall. This is increase in recharge potential comparing to pre-development conditions and it exceeds the average infiltration rate of 104 mm/yr reported in the Carp River Watershed Study.

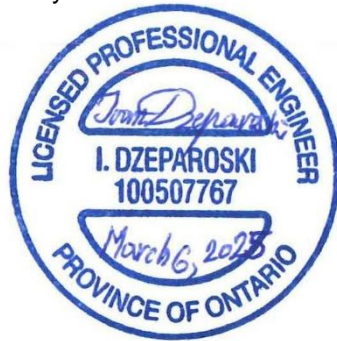
4.0 CONCLUSION

A preliminary water balance analysis of the existing site was conducted to determine pre-development infiltration rates, which will serve as a baseline for comparing the post-development conditions and assessing the impact of the increase in impervious surfaces on the site.

To evaluate the impact of the proposed development an analysis was conducted on two post-development scenarios: one without LID measures and one with LID measures at each site. The first scenario, without LID measures, indicated that the percentage of annual rainfall infiltrated volume would decrease by less than 10% (approximately 7%) compared to pre-development conditions. In the second scenario, with LID measures, the percentage of

annual rainfall infiltrated volume would increase by around 5% compared to pre-development conditions. Based on this preliminary analysis, the impact of the proposed development on groundwater recharge is expected to be minimal. However, it is important to note that additional groundwater level monitoring, particularly in the spring, is needed to better understand the relationship between groundwater recharge and surface runoff.

Prepared By:



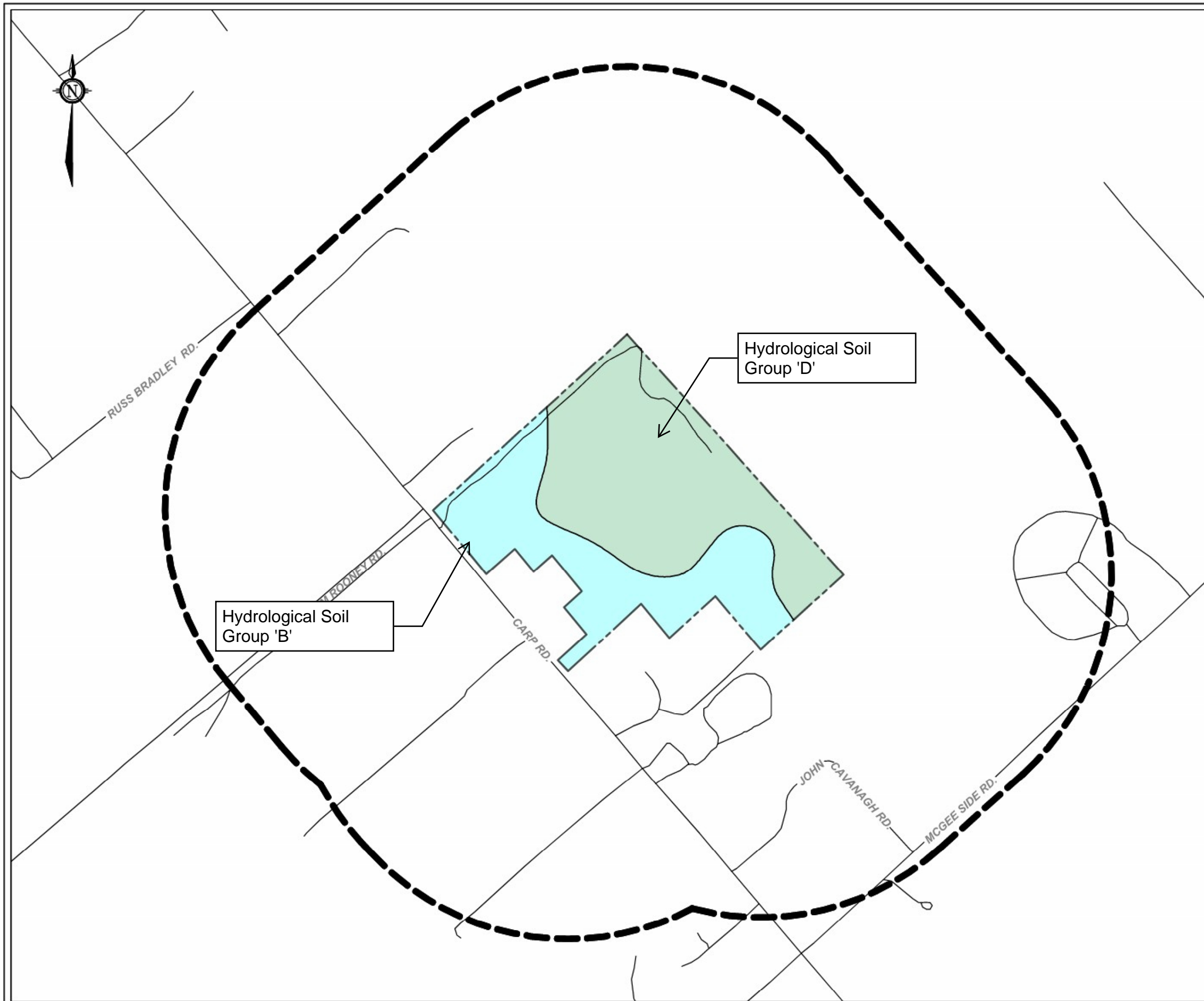
Ivan Dzeparoski, P.Eng.
Senior Water Resource Engineer

Reviewed by:

A handwritten signature in blue ink that reads "Cody Newton".

Cody Newton, P.Eng.
Project Engineer

Appendix A:
Excerpt from Geotechnical Investigation
Report (GEMTEC, August 2024)



Legend

- Subject Site
- Study Area
500m around Subject Site
- Silty Sand, Sand and Silt, Till
- Silty Clay, Clayey Silt

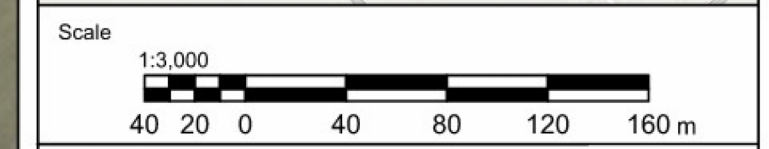
Scale		1:7500	
32 Steacie Drive, Ottawa, ON K2K 2A9 T: (613) 836-1422 www.gemtec.ca ottawa@gemtec.ca			
Client:		Project No.:	
TLC Holdings LTD.		102151.001	
Project			
Hydrogeological Investigation & Terrain Analysis 3160 Carp Rd, Ottawa, ON			
Drwn By:	Chkd By:	Inferred Surficial Geology	
C.Z./S.L.	B.R.		
Date: August 2024		Rev.	Figure A-1
© King's Printer for Ontario		0	



Legend

BH/MW # ← BOREHOLE / MONITORING WELL ID
 XX.XX ← GROUND SURFACE ELEVATION, IN METERS
GEODETTIC DATUM

- Borehole Location (current investigation)
- Test Pit Location (previous investigation by GEMTEC)
- Borehole/ Test Well Location (previous investigation by GEMTEC)
- Approximate Property Boundary
- Proposed Lot



GEMTEC
 CONSULTING ENGINEERS
 AND SCIENTISTS

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 Ottawa, ON K2K 2A9
 T: (613) 836-1422
 www.gemtec.ca
 ottawa@gemtec.ca

Client:	TLC Holdings LTD.	Project No.:	102151.001
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Project
 Hydrogeological Investigation & Terrain Analysis
 3160 Carp Rd, Ottawa, ON

Drwn By:	Chkd By:	Detailed Site Plan
C.Z./S.L.	B.R.	

Date: August 2024	Rev.	Figure A-2
© King's Printer for Ontario	0	

Coordinate System: NAD 1983 UTM Zone 18N
 Service Layer Credits: World Topographic Map: City of Ottawa, Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, NRCAN, Parks Canada
 Bing Maps Aerial: © 2024 Microsoft Corporation © 2018 DigitalGlobe ©CNES (2018) Distribution Airbus DS

Table E1: Comparison of infiltration rates based on field saturated hydraulic conductivity (using Guelph Permeameter) and soil texture / grain size analysis (lab testing). Refer to Figure 1 for infiltration test locations.

Test ID	Depth m bgs	Field Testing		Infiltration Rates ² (mm/hr)		
		Guelph Permeameter K_{fs} (cm/s)	Soil Class. (GSA)	Guelph Permeameter $*K_{fs}$	Soil Texture	Hazen Method $*K_{fs}$
GP 18-1S	0.30 – 0.45	1.3×10^{-3}	4.0×10^{-4}	92	61.2	197
GP 18-1D	1.00 – 1.15	1.1×10^{-2}	3.6×10^{-2}	163	210	230
GP 18-3S	0.50 – 0.65	1.1×10^{-5}	-	26	-	-
GP 18-5S	0.25 – 0.40	5.0×10^{-5}	-	38	-	-
GP 18-9S	0.25 - 0.40	8.5×10^{-4}	-	82	-	-
GP 18-10S	0.40 - 0.55	1.1×10^{-5}	-	26	-	-
GP 18-14S	0.30 – 0.45	2.1×10^{-4}	5.3×10^{-6}	56	13.2	20

Notes:

1. Appendix C – Site Evaluation and Soil Testing Protocol for Stormwater Infiltration (Low Impact Development Stormwater Management Planning and Design Guide, Credit Valley Conservation Authority, Version 1.0, 2011)
2. The estimated infiltration rates do not include a safety factor and do not represent design infiltration rates.

Abbreviations:

K_{fs} = Field saturated hydraulic conductivity;

GSA = Grain Size Analysis, Hazen D_{10} ; **Soil Texture** = US Maryland Stormwater Design Manual – Table D.13.1 Hydrologic Soil Properties Classified by Soil Texture (revised May 2009);

$*K_{fs}$ converted to infiltration rate based on K_{fs} -infiltration relationship found in OMMAH;

OMMAH = Ontario Ministry of Municipal Affairs and Housing (OMMAH), 1997. Supplementary Guidelines to Ontario Building Code 1997. SG-6 Percolation Times and Soil Descriptions, Toronto, Ontario

Appendix B:
Hydrology Parameters

Table B-1: CN Values For Various Types of Land Use and Land Cover

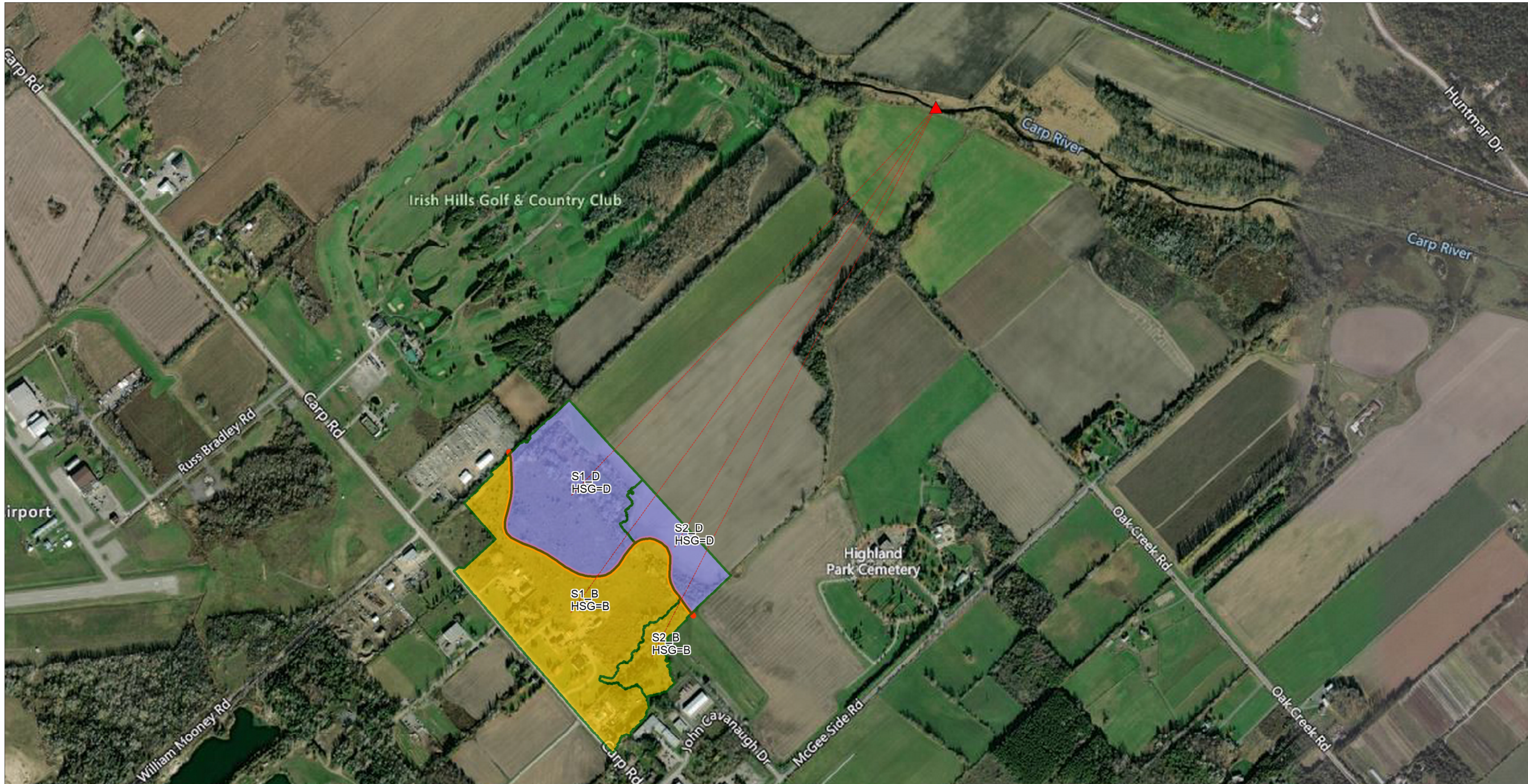
Land Use	Land Cover	HSG		CN _B	CN _D
Landscape	Grass	B	D	61	80
Local Road	Dirt	B	D	82	89
Road Shoulder	Gravel	B	D	85	91
Agricultural	Row Crops (Straight Row)	B	D	83	91

Table B-2: Initial Abstraction Calculation

Sub-Catchment ID	AMCII		AMCIII							AMCII	
	CN	CN	Total Rainfall ¹ (mm)	S _{AMCIII}	IA _{AMCIII} (mm)	Q (mm)	IA _{input} (mm)	S*	CN*	CN*	
S1_D	91	96	25516	11.1	2.2	25502.3	5.1	8.3	97	92	
S2_D	89	95	25516	12.4	2.5	25500.8	4.7	10.3	96	90	
S1_B	78	89	25516	30.7	6.1	25478.9	7.4	29.5	90	77	
S2_B	83	92	25516	20.9	4.2	25490.7	7.8	17.2	94	85	

Note ¹: Total Rainfall for the period from 1960 to 2010

Appendix C:
Water Balance Model – PCSWMM Input and
Output Files


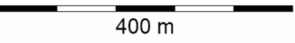


Legend

▲ Outfalls

Subcatchments

- HSG 'B'
- HSG 'D'
- HSG Divide


 400 m

Robinson
Land Development

350 Palladium Drive
Ottawa, ON K2V 1A8
(613) 592-6060 rcii.com

DESIGN:	ID	T & L CARROLL HOLDINGS INC.	Project No.: 24104
DRAWN:	ID	CARROLL INDUSTRIAL SUBDIVISION 3160 CARP ROAD CITY OF OTTAWA	Date: MARCH 2025
CHECKED:	ID	MODEL SCHEMATIC WATER BALANCE MODEL PRE-DEVELOPMENT DRAINAGE CONDITIONS	Drawing No.: FIGURE C1
APPROVED	BM		



Legend

● Junctions	■ On-Site Storage	— Vegetated Swale	■ Development
▲ Outfalls	▼ SWM Facility	— Culvert	■ Road Right-of-Way
		— Conveyance Ditch	■ Stormwater Management Block
			■ Existing Areas

400 m

N



Robinson
Land Development

350 Palladium Drive
Ottawa, ON K2V 1A8
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DESIGN:	ID	T & L CARROLL HOLDINGS INC.	Project No.: 24104
DRAWN:	ID	CARROLL INDUSTRIAL SUBDIVISION 3160 CARP ROAD CITY OF OTTAWA	Date: MARCH 2025
CHECKED:	ID	MODEL SCHEMATIC WATER BALANCE MODEL POST-DEVELOPMENT DRAINAGE CONDITIONS	Drawing No.: FIGURE C2
APPROVED	BM		

WB EXIST (51 years of rainfall data: 1960-2010)

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SKIP_STEADY_STATE NO

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START_TIME 06:00:00
REPORT_START_DATE 04/01/1960
REPORT_START_TIME 06:00:00
END_DATE 12/01/2010
END_TIME 06:00:00
SWEEP_START 01/01
SWEEP_END 12/31
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WET_STEP 00:01:00
DRY_STEP 00:05:00
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RULE_STEP 00:00:00

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NORMAL_FLOW_LIMITED BOTH
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LENGTHENING_STEP 0
MIN_SURFAREA 0
MAX_TRIALS 8
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LAT_FLOW_TOL 5
MINIMUM_STEP 0.5
THREADS 22

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SNOWMELT 0 0.9 0.6 115.8 45 0.0
ADC IMPERVIOUS 0.1 0.35 0.53 0.66 0.75 0.82 0.87 0.92 0.95 0.98
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Width %Slope CurbLen SnowPack
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369.225 5.044 0 Existing
;HSG=D
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;HSG=B
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100.596 5.833 0 Existing
;HSG=D
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RouteTo PctRouted
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PERVIOUS 100
S1_D 0.013 0.25 1.57 5.1 0
PERVIOUS 100
S2_B 0.013 0.25 1.57 7.8 0
PERVIOUS 100
S2_D 0.013 0.25 1.57 4.7 0
PERVIOUS 100
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S2_D 89.114 0.5 7 0 0

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Seep Ebot Egw Umc ETupat
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HSG_D 0.517 0.285 0.417 2.784 43.8 0 0.8 5.5
0.004 109.2 111.2 0.35

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[TIMESERIES]
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1961 04/01/1961 15:00:00 0
1961 04/01/1961 16:00:00 0
.....
Too many data points (5860 in total).
;Rainfall (mm/hr)
1962 01/01/1962 00:00:00 0
1962 01/01/1962 01:00:00 0
1962 01/01/1962 02:00:00 0
1962 01/01/1962 03:00:00 0
1962 01/01/1962 04:00:00 0
1962 01/01/1962 05:00:00 0
1962 01/01/1962 06:00:00 0
1962 01/01/1962 07:00:00 0
1962 01/01/1962 08:00:00 0
1962 01/01/1962 09:00:00 0
1962 01/01/1962 10:00:00 0
.....
```

Too many data points (7965 in total).

```
;Rainfall (mm/hr)
1963      01/01/1963 00:00:00  0
1963      01/01/1963 01:00:00  0
1963      01/01/1963 02:00:00  0
1963      01/01/1963 03:00:00  0
1963      01/01/1963 04:00:00  0
1963      01/01/1963 05:00:00  0
1963      03/01/1963 06:00:00  0
1963      03/01/1963 07:00:00  0
1963      03/01/1963 08:00:00  0
1963      03/01/1963 09:00:00  0
1963      03/01/1963 10:00:00  0
```

.....
Too many data points (7327 in total).

```
;Rainfall (mm/hr)
OTTRAIN_1960-2010 04/01/1960 06:00:00  0
OTTRAIN_1960-2010 04/01/1960 07:00:00  0
OTTRAIN_1960-2010 04/01/1960 08:00:00  0
OTTRAIN_1960-2010 04/01/1960 09:00:00  0
OTTRAIN_1960-2010 04/01/1960 10:00:00  0
OTTRAIN_1960-2010 04/01/1960 11:00:00  0
OTTRAIN_1960-2010 04/01/1960 12:00:00  0
OTTRAIN_1960-2010 04/01/1960 13:00:00  0
OTTRAIN_1960-2010 04/01/1960 14:00:00  0
OTTRAIN_1960-2010 04/01/1960 15:00:00  0
OTTRAIN_1960-2010 04/01/1960 16:00:00  0
```

.....
Too many data points (255816 in total).

```
[REPORT]
;;Reporting Options
INPUT      YES
CONTROLS   NO
SUBCATCHMENTS ALL
NODES     ALL
LINKS     ALL
```

```
[TAGS]
Subcatch  S1_B      B
Subcatch  S1_D      D
Subcatch  S2_B      B
Subcatch  S2_D      D
```

```
[MAP]
DIMENSIONS      343500.18135    5019612.6261    344856.60565
5021437.6119
UNITS           Meters
```

```
[COORDINATES]
;;Node          X-Coord      Y-Coord
;;-----
CARP            344784.95      5021344.658
```

```
[VERTICES]
;;Link          X-Coord      Y-Coord
;;-----
```

```
[POLYGONS]
;;Subcatchment X-Coord      Y-Coord
;;-----
```

```
[SYMBOLS]
;;Gage          X-Coord      Y-Coord
;;-----
```

WB EXIST OUTPUT (51 years of rainfall data: 1960-2010)

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.2 (Build 5.2.4)

Element Count

Number of rain gages 1
Number of subcatchments ... 4
Number of nodes 1
Number of links 0
Number of pollutants 0
Number of land uses 0

RaiNGage Summary

Recording Name	Data Source	Data Type
Interval		

Rainfall	OTTRAIN_1960-2010	INTENSITY 60 min.

Subcatchment Summary

Name	Area	Width	%Imperv	%Slope	Rain
S1_B	16.75	369.23	10.85	5.0440	Rainfall
S1_D	10.28	310.68	0.00	4.5970	Rainfall
S2_B	2.10	100.60	0.00	5.8330	Rainfall
S2_D	3.51	212.01	0.33	3.4990	Rainfall

Node Summary

Name	Type	Invert Elev.	Max. Depth	Ponded Area
CARP	OUTFALL	91.00	0.00	0.0

Analysis Options

Flow Units CMS
Process Models:
Rainfall/Runoff YES
RDII NO
Snowmelt YES
Groundwater YES
Flow Routing NO
Water Quality NO
Infiltration Method CURVE_NUMBER
Surcharge Method EXTRAN
Starting Date 04/01/1960 06:00:00
Ending Date 12/01/2010 06:00:00
Antecedent Dry Days 0.0
Report Time Step 00:01:00
Wet Time Step 00:01:00
Dry Time Step 00:05:00

	Volume	Depth
Runoff Quantity Continuity	hectare-m	mm
Initial Snow Cover	0.000	0.000
Total Precipitation	832.525	25515.677
Evaporation Loss	165.189	5062.804
Infiltration Loss	560.507	17178.726
Surface Runoff	106.836	3274.379
Snow Removed	0.000	0.000
Final Snow Cover	0.000	0.000
Final Storage	0.000	0.000
Continuity Error (%)	-0.001	

	Volume	Depth
Groundwater Continuity	hectare-m	mm

Initial Storage	90.394	2770.430
Infiltration	560.507	17178.726
Upper Zone ET	561.427	17206.920
Lower Zone ET	13.854	424.606
Deep Percolation	0.000	0.003
Groundwater Flow	49.708	1523.474
Final Storage	39.868	1221.900
Continuity Error (%)	-2.144	

	Volume	Volume
Flow Routing Continuity	hectare-m	10^6 ltr
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	106.836	1068.375
Groundwater Inflow	49.708	497.084
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	156.544	1565.460
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.000	

Subcatchment Runoff Summary

Imperv	Perv	Total Precip	Total Runoff	Total Peak Runoff	Total Infil
S1_B		25515.68	0.00	4796.94	18608.58
S1_D	2110.55	2110.55	353.47	0.86	0.083
S2_B		25515.68	0.00	5672.94	14841.13
S2_D	5001.66	5001.66	514.10	0.75	0.196
S1_B		25515.68	0.00	4426.06	18904.65
S2_D	2185.00	2185.00	45.79	0.13	0.086
S2_D		25515.68	0.00	4924.69	16169.98
S2_D	63.94	4421.14	4421.14	155.01	0.29

Groundwater Summary

Average	Average	Final	Final	Total	Total	Maximum
Upper	Water	Upper	Total Water	Total	Lower	Lateral
Moist.	Table	Moist.	Table	Evap	Seepage	Outflow
Subcatchment		Subcatchment		mm	mm	CMS
S1_B				18608.58	18396.38	0.01
S1_D	106.60	0.13	106.60	14841.13	16035.07	0.00
S2_B	109.20	0.31	109.20	18904.65	19781.20	0.01
S2_D	106.60	0.08	106.60	18904.65	19781.20	0.01
S2_D	106.60	0.08	106.60	16169.98	17373.30	0.00
S2_D	109.20	0.31	109.20	16169.98	17373.30	0.00

Analysis begun on: Mon Mar 3 11:52:55 2025
Analysis ended on: Mon Mar 3 11:57:09 2025
Total elapsed time: 00:04:14

WB POST – NO LID (51 years of rainfall data: 1960-2010)

```
[TITLE]
;;Project Title/Notes

[OPTIONS]
;;Option Value
FLOW UNITS CMS
INFILTRATION CURVE_NUMBER
FLOW_ROUTING DYNWAVE
LINK_OFFSETS ELEVATION
MIN_SLOPE 0
ALLOW_PONDING NO
SKIP_STEADY_STATE NO

START_DATE 04/01/1960
START_TIME 06:00:00
REPORT_START_DATE 04/01/1960
REPORT_START_TIME 06:00:00
END_DATE 12/01/2010
END_TIME 06:00:00
SWEEP_START 01/01
SWEEP_END 12/31
DRY_DAYS 0
REPORT_STEP 00:01:00
WET_STEP 00:01:00
DRY_STEP 00:05:00
ROUTING_STEP 1
RULE_STEP 00:00:00

INERTIAL_DAMPING PARTIAL
NORMAL_FLOW_LIMITED BOTH
FORCE_MAIN_EQUATION H-W
VARIABLE_STEP 0.75
LENGTHENING_STEP 0
MIN_SURFAREA 0
MAX_TRIALS 8
HEAD_TOLERANCE 0.0015
SYS_FLOW_TOL 5
LAT_FLOW_TOL 5
MINIMUM_STEP 0.5
THREADS 22

[EVAPORATION]
;;Data Source Parameters
-----
MONTHLY 0.0 0.0 0.0 0.0 3.6 4.3 4.5 3.7 2.4
1.4 0.0 0.0
DRY_ONLY NO

[TEMPERATURE]
FILE "C:\Users\ldzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Continuous
Simulation\Temperature\OTT_TEMP_1960-2010.dat" 04/01/1960 C10
WINDSPEED MONTHLY 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
SNOWMELT 0 0.9 0.6 115.8 45 0.0
ADC IMPERVIOUS 0.1 0.35 0.53 0.66 0.75 0.82 0.87 0.92 0.95 0.98
ADC PERVIOUS 0.1 0.35 0.53 0.66 0.75 0.82 0.87 0.92 0.95 0.98

[RAINGAGES]
;;Name Format Interval SCF Source
-----
Rainfall INTENSITY 1:00 1.0 TIMESERIES OTTRAIN_1960-2010

[SUBCATCHMENTS]
;;Name Rain Gage Outlet Area %Imperv Width
%Slope CurbLen SnowPack
-----
;D
BLCK-10 Rainfall St_BLK-10 1.1982 40 269.598 2
0 Existing
;B
BLCK-11 Rainfall St_BLK-11 1.3852 40 311.673 2
0 Existing
;B
BLCK-12 Rainfall St_BLK-12 1.4626 40 329.088 2
0 Existing
;B
BLCK-2 Rainfall St_BLK-2 1.0516 40 236.612 2
0 Existing
;B
BLCK-2R Rainfall St_BLK-2R 0.1472 40 33.12 2
0 Existing
;D
BLCK-3 Rainfall St_BLK-3 0.7353 40 165.444 2
0 Existing
;D
BLCK-3R Rainfall St_BLK-3R 0.4634 40 104.266 2
0 Existing
;D
BLCK-4 Rainfall St_BLK-4 0.4778 40 107.506 2
0 Existing
;D
BLCK-4R Rainfall St_BLK-4R 2.2529 40 506.908 2
0 Existing
;D
```

```
BLCK-5 Rainfall St_BLK-5 0.4975 40 111.939 2
0 Existing
;D
BLCK-5R Rainfall St_BLK-5R 0.866 40 194.852 2
0 Existing
;D
BLCK-6 Rainfall St_BLK-6 0.489 40 110.026 2
0 Existing
;D
BLCK-6R Rainfall St_BLK-6R 0.804 40 180.902 2
0 Existing
;D
BLCK-7 Rainfall St_BLK-7 2.6732 40 601.476 2
0 Existing
;D
BLCK-7R Rainfall J2 0.2852 0 64.171 2
0 Existing
;B
BLCK-8 Rainfall St_BLK-8 1.28 40 288.003 2
0 Existing
;D
BLCK-9 Rainfall St_BLK-9 1.1441 40 257.425 2
0 Existing
;B
EX-1 Rainfall J21 6.9852 13.98 478.16
5.38 0 Existing
;B
EX-2 Rainfall J1 1.8572 0 159.364
5.123 0 Existing
;B
EX-3 Rainfall J6 2.2934 24.341 496.246
5.426 0 Existing
;B
S1 Rainfall J4 0.2209 44.538 467.81 3
0 Existing
;D
S10 Rainfall J18 0.057 44.538 114.504 3
0 Existing
;D
S11 Rainfall J25 0.0642 44.538 138.661 3
0 Existing
;D
S12 Rainfall J16 0.067 44.538 134.161 3
0 Existing
;D
S13 Rainfall J23 0.0757 44.538 163.323 3
0 Existing
;B
S14 Rainfall J22 0.2848 44.538 615.651 3
0 Existing
;B
S15 Rainfall J15 0.1184 44.538 254.023 3
0 Existing
;B
S16 Rainfall J14 0.1805 44.538 366.497 3
0 Existing
;B
S2 Rainfall J8 0.2104 44.538 435.791 3
0 Existing
;D
S3 Rainfall J5 0.0752 44.538 161.651 3
0 Existing
;D
S4 Rainfall J7 0.0747 44.538 161.514 3
0 Existing
;D
S5 Rainfall J11 0.0778 44.538 166.667 3
0 Existing
;D
S6 Rainfall J9 0.1401 44.538 283.833 3
0 Existing
;D
S7 Rainfall J12 0.0779 44.538 169.348 3
0 Existing
;D
S8 Rainfall J19 0.0925 44.538 200.825 3
0 Existing
;D
S9 Rainfall J26 0.0928 44.538 200.649 3
0 Existing
;D
SWM_Block Rainfall SWM_Facility 1.7832 28.5 966.871 2
0 Existing
;B
SWR-1 Rainfall J35 0.0959 0 191.8 2
0 Existing
;D
SWR-2 Rainfall J28 0.0995 0 199 2
0 Existing
;D
SWR-3 Rainfall J30 0.1784 0 356.8 2
0 Existing
;D
SWR-4 Rainfall J31 0.0935 0 187 2
0 Existing
;D
```

SWR-5 0	Existing	Rainfall	J32	0.0673	0	134.6	2	SWR-6 100	0.013	0.25	1.57	4.67	0	PERVIOUS				
[SUBAREAS]								[INFILTRATION]										
;;Subcatchment								;;Subcatchment										
PctRouted								Param1 Param2 Param3 Param4 Param5										
-----								-----										
BLCK-10 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-10	80	0.5	7	0	0						
BLCK-11 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-11	67.689	0.5	7	0	0						
BLCK-12 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-12	62.141	0.5	7	0	0						
BLCK-2 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-2	64.484	0.5	7	0	0						
BLCK-2R 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-2R	61	0.5	7	0	0						
BLCK-3 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-3	78.316	0.5	7	0	0						
BLCK-3R 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-3R	72.528	0.5	7	0	0						
BLCK-4 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-4	80	0.5	7	0	0						
BLCK-4R 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-4R	80	0.5	7	0	0						
BLCK-5 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-5	80	0.5	7	0	0						
BLCK-5R 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-5R	80	0.5	7	0	0						
BLCK-6 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-6	80	0.5	7	0	0						
BLCK-6R 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-6R	80	0.5	7	0	0						
BLCK-7 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-7	66.873	0.5	7	0	0						
BLCK-7R 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-7R	80	0.5	7	0	0						
BLCK-8 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-8	61	0.5	7	0	0						
BLCK-9 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-9	79.33	0.5	7	0	0						
EX-1 100	0.013	0.25	1.57	4.67	0	PERVIOUS	EX-1	57.493	0.5	7	0	0						
EX-2 100	0.013	0.25	1.57	4.67	0	PERVIOUS	EX-2	83.145	0	7	0	0						
EX-3 100	0.013	0.25	1.57	4.67	0	PERVIOUS	EX-3	73.102	0	7	0	0						
S1 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S1	67.673	0.5	7	0	0						
S10 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S10	81.874	0.5	7	0	0						
S11 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S11	81.642	0.5	7	0	0						
S12 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S12	81.882	0.5	7	0	0						
S13 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S13	79.073	0.5	7	0	0						
S14 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S14	65.088	0.5	7	0	0						
S15 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S15	68.244	0.5	7	0	0						
S16 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S16	65.029	0.5	7	0	0						
S2 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S2	68.084	0.5	7	0	0						
S3 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S3	81.778	0.5	7	0	0						
S4 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S4	81.79	0.5	7	0	0						
S5 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S5	81.629	0.5	7	0	0						
S6 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S6	81.866	0.5	7	0	0						
S7 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S7	81.677	0.5	7	0	0						
S8 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S8	81.788	0.5	7	0	0						
S9 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S9	81.779	0.5	7	0	0						
SWM_Block 100	0.013	0.25	1.57	4.67	0	PERVIOUS	SWM_Block	80	0.5	7	0	0						
SWR-1 100	0.013	0.25	1.57	4.67	0	PERVIOUS	SWR-1	61	0.5	7	0	0						
SWR-2 100	0.013	0.25	1.57	4.67	0	PERVIOUS	SWR-2	66.88	0.5	7	0	0						
SWR-3 100	0.013	0.25	1.57	4.67	0	PERVIOUS	SWR-3	80	0.5	7	0	0						
SWR-4 100	0.013	0.25	1.57	4.67	0	PERVIOUS	SWR-4	80	0.5	7	0	0						
SWR-5 100	0.013	0.25	1.57	4.67	0	PERVIOUS	SWR-5	80	0.5	7	0	0						
SWR-6 100	0.013	0.25	1.57	4.67	0	PERVIOUS	SWR-6	80	0.5	7	0	0						
[LID_CONTROLS]								[LID_CONTROLS]										
;;Name								Type/Layer Parameters										
-----								-----										
VegSwale 100	0.013	0.25	1.57	4.67	0	PERVIOUS	VegSwale	VS										
VegSwale 100	0.013	0.25	1.57	4.67	0	PERVIOUS	VegSwale	SURFACE	1200	0.1	0.24	0.3	3					
VegSwale_RY 100	0.013	0.25	1.57	4.67	0	PERVIOUS	VegSwale_RY	VS										
VegSwale_RY 100	0.013	0.25	1.57	4.67	0	PERVIOUS	VegSwale_RY	SURFACE	600	0.1	0.24	0.3	3					
[LID_USAGE]								[LID_USAGE]										
;;Subcatchment								LID Process Number Area Width InitSat										
FromImp								ToPerv RptFile DrainTo FromPerv										
-----								-----										
[AQUIFERS]								[AQUIFERS]										
;;Name								Por WP FC Ksat Kslope Tslope ETu ETs Seep										
Ebot Egw Umc ETupat								-----										
-----								-----										
BLCK-11AQ 107.518	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-11AQ	0.484	0.131	0.201	80.594	40.042	0	0.8	2.908	0.004		
BLCK-12AQ 106.759	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-12AQ	111.916	0.266	0.469	0.061	0.104	115.654	38.349	0	0.8	1.74	0.004
BLCK-2AQ 107.079	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-2AQ	112.237	0.228	0.475	0.091	0.145	100.844	39.064	0	0.8	2.233	0.004
BLCK-3AQ 108.969	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-3AQ	112.101	0.244	0.512	0.264	0.387	13.425	43.286	0	0.8	5.145	0.004
BLCK-3BAQ 108.169	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-3BAQ	111.298	0.338	0.497	0.191	0.286	49.955	41.517	0	0.8	3.928	0.004
BLCK-7AQ 107.405	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-7AQ	111.623	0.299	0.482	0.121	0.187	85.743	39.793	0	0.8	2.736	0.004
BLCK-9AQ 109.107	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-9AQ	111.962	0.26	0.515	0.277	0.405	7.01	43.595	0	0.8	5.359	0.004
HSG_B 106.6	0.013	0.25	1.57	4.67	0	PERVIOUS	HSG_B	111.238	0.345	0.466	0.047	0.084	122.85	38	0	0.8	1.5	0.004
HSG_D 109.2	0.013	0.25	1.57	4.67	0	PERVIOUS	HSG_D	112.3	0.22	0.517	0.285	0.417	2.784	43.8	0	0.8	5.5	0.004
S14AQ 106.62	0.013	0.25	1.57	4.67	0	PERVIOUS	S14AQ	111.2	0.35	0.466	0.049	0.087	121.771	38.051	0	0.8	1.536	0.004
S15AQ 106.931	0.013	0.25	1.57	4.67	0	PERVIOUS	S15AQ	112.286	0.221	0.473	0.078	0.128	107.121	38.756	0	0.8	2.204	0.004
S1AQ 107.002	0.013	0.25	1.57	4.67	0	PERVIOUS	S1AQ	112.147	0.237	0.474	0.083	0.134	104.728	38.789	0	0.8	2.104	0.004
S2AQ 107.022	0.013	0.25	1.57	4.67	0	PERVIOUS	S2AQ	112.144	0.24	0.474	0.087	0.139	102.899	38.96	0	0.8	2.164	0.004
107.022	0.013	0.25	1.57	4.67	0	PERVIOUS	107.022	112.107	0.242									

[GROUNDWATER]									
Subcatchment	Aquifer	Node	Esurf						
A3	Dsw	Egwt	Ebot	Wgr	Umc	A1	B1	A2	B2
SWR-2AQ	0.482	0.12	0.187	85.949	39.805	0	0.8	2.732	0.004
107.454	112.018	0.26							
[JUNCTIONS]									
Name	Surface	Parameters							
Existing	PLOWABLE	0.153	0.153	0.0	0.10	0.00			
0.00	0.0								
Existing	IMPERVIOUS	0.153	0.153	0.0	0.10	0.00			
0.00	25.4								
Existing	PERVIOUS	0.153	0.153	0.0	0.10	0.00			
0.00	25.4								
Existing	REMOVAL	25.4	0.0	0.0	0.0	0.0			
0.0									
[OUTFALLS]									
Name	Elevation	Type	Stage Data	Gated	Route To				
CARP	91	FREE		NO					
OF2	109.623	NORMAL		NO					
[STORAGE]									
Name	Elev.	MaxDepth	InitDepth	Shape	Curve Name/Params				
SurfDepth	Pevap	Psi	Ksat	IMD					
St_BLK-10	115.186	0.5	0	FUNCTIONAL	0	0			
167.748	0								
St_BLK-11	115.885	0.5	0	FUNCTIONAL	0	0			
138.52	0								
St_BLK-12	115.351	0.5	0	FUNCTIONAL	0	0			
146.26	0								
St_BLK-2	115.908	0.5	0	FUNCTIONAL	0	0			
105.16	0								
St_BLK-2R	114.257	0.5	0	FUNCTIONAL	0	0			
14.72	0								
St_BLK-3	115.453	0.5	0	FUNCTIONAL	0	0			
88.236	0								
St_BLK-3R	114.22	0.5	0	FUNCTIONAL	0	0			
46.34	0								
St_BLK-4	115.386	0.5	0	FUNCTIONAL	0	0			
66.892	0								
St_BLK-4R	113.406	0.5	0	FUNCTIONAL	0	0			
315.406	0								
St_BLK-5	115.163	0.5	0	FUNCTIONAL	0	0			
69.65	0								
St_BLK-5R	112.637	0.5	0	FUNCTIONAL	0	0			
121.24	0								
St_BLK-6	114.937	0.5	0	FUNCTIONAL	0	0			
68.46	0								
St_BLK-6R	112.369	0.5	0	FUNCTIONAL	0	0			
112.56	0								
St_BLK-7	112.677	0.5	0	FUNCTIONAL	0	0			
267.32	0								
St_BLK-8	114.901	0.5	0	FUNCTIONAL	0	0			
128	0								
St_BLK-9	114.907	0.5	0	FUNCTIONAL	0	0			
160.174	0								
St_BLK-9	110.2	1.1	0	TABULAR	Pond				
0	0								
[CONDUITS]									
[SNOWPACKS]									

```

;;Name      From Node      To Node      Length      Roughness      InOffset      O_BLCK-10      St_BLCK-10      J19      115.186      TABULAR/HEAD
OutOffset  InitFlow      MaxFlow
-----
C3          J33              SWM_Facility 5          0.035         110.869        O_BLCK-10      St_BLCK-10      NO      115.186      TABULAR/HEAD
110.75     0              0              CULV-1       J17            J24           11.551         0.024         113.301        O_BLCK-11      St_BLCK-11      J8      115.885      TABULAR/HEAD
113.278   0              0              Ditch-2      J1             J2            211.75        0.035         114.45         O_BLCK-12      St_BLCK-12      J20     115.351      TABULAR/HEAD
110.15     0              0              ;Existing
;Existing   Ditch-3        J2            OF2           95.196        0.01          110.15         O_BLCK-12      St_BLCK-12      NO      115.351      TABULAR/HEAD
109.623   0              0              Swale-1       J3             J4            169.009       0.035         114.915        O_BLCK-2        St_BLCK-2        NO      115.908      TABULAR/HEAD
114.408   0              0              Swale-10      J18            J17           35.344         0.035         113.407        O_BLCK-2R      St_BLCK-2R      J35     114.257      TABULAR/HEAD
113.301   0              0              Swale-10A     J16            J17           20.424         0.035         113.362        O_BLCK-3        St_BLCK-3        NO      115.453      TABULAR/HEAD
113.301   0              0              Swale-11      J25            J24           53.073         0.035         113.437        O_BLCK-3        St_BLCK-3        NO      115.453      TABULAR/HEAD
113.278   0              0              Swale-11A     J23            J24           41.033         0.035         113.401        O_BLCK-4        St_BLCK-4        J12     115.386      TABULAR/HEAD
113.278   0              0              Swale-12      J15            J16           67.278         0.035         113.564        O_BLCK-4        St_BLCK-4        NO      115.386      TABULAR/HEAD
113.362   0              0              Swale-13      J22            J23           65.486         0.035         113.597        O_BLCK-5        St_BLCK-5        J26     115.163      TABULAR/HEAD
113.401   0              0              Swale-14      J21            J22           251.597        0.035         114.352        O_BLCK-5R      St_BLCK-5R      NO      112.637      TABULAR/HEAD
113.597   0              0              Swale-15      J20            J15           95.55          0.035         113.851        O_BLCK-6        St_BLCK-6        J32     112.637      TABULAR/HEAD
113.564   0              0              Swale-15A     J14            J20           23.415         0.035         113.921        O_BLCK-6R      St_BLCK-6R      NO      114.937      TABULAR/HEAD
113.851   0              0              Swale-16      J13            J14           138.01         0.035         114.335        O_BLCK-6R      St_BLCK-6R      NO      112.369      TABULAR/HEAD
113.921   0              0              Swale-17      J24            SWM_Facility 5          0.035         111.177        O_BLCK-7        St_BLCK-7        J24     112.677      TABULAR/HEAD
110.9      0              0              Swale-2       J6             J8            168.154        0.035         114.889        O_BLCK-7        St_BLCK-7        NO      112.677      TABULAR/HEAD
114.385   0              0              Swale-3       J4             J5            78.585         0.035         114.408        O_BLCK-8        St_BLCK-8        J23     114.901      TABULAR/HEAD
114.172   0              0              Swale-4       J8             J7            79.882         0.035         114.385        O_BLCK-8        St_BLCK-8        NO      114.901      TABULAR/HEAD
114.145   0              0              Swale-5       J5             J11           72.872         0.035         114.172        O_BLCK-9        St_BLCK-9        J18     114.907      TABULAR/HEAD
113.953   0              0              Swale-5A      J11            J12           22.387         0.035         113.953        O_BLCK-9        St_BLCK-9        NO      114.907      TABULAR/HEAD
113.886   0              0              Swale-6       J7             J9            98.312         0.035         114.145        O_St_BLCK-3R   St_BLCK-3R      J27     114.22       TABULAR/HEAD
113.85    0              0              Swale-6A      J9             J19           54.737         0.035         113.85         O_BLCK-3R      St_BLCK-3R      NO      114.22       TABULAR/HEAD
113.686   0              0              Swale-7       J12            J26           74.423         0.035         113.886        O_St_BLCK-4R   St_BLCK-4R      J30     113.406      TABULAR/HEAD
113.663   0              0              Swale-8       J19            J18           92.837         0.035         113.686        O_BLCK-4R      St_BLCK-4R      NO      113.406      TABULAR/HEAD
113.407   0              0              Swale-9       J26            J25           75.437         0.035         113.663        [XSECTIONS]
Swale-9      J26            J25           75.437         0.035         113.663        ;;Link
113.437   0              0              Swale-RY1_1   J10            J35           81.073         0.035         113              Shape      Geom1      Geom2      Geom3      Geom4
Swale-RY1_2   J35            J27           13.698         0.035         112.757        Barrels   Culvert
Swale-RY2     J27            J28           89.843         0.035         112.716        C3          TRAPEZOIDAL 1.2        0          3          3          1
Swale-RY3     J28            J30           179.934        0.035         112.446        CULV-1     CIRCULAR    0.75       0          0          0          1
111.906     0              0              Swale-RY4     J30            J31           164.375        0.035         111.906        Ditch-2    TRAPEZOIDAL 1          1          3          3          1
111.413     0              0              Swale-RY5     J31            J32           92.109         0.035         111.413        Ditch-3    IRREGULAR   ExisitngDitch
111.137     0              0              Swale-RY6     J32            J33           89.269         0.035         111.137        Swale-1    TRAPEZOIDAL 1.2        0          3          3          1
110.869     0              0              [ORIFICES]
;;Name      From Node      To Node      Type      Offset      Qcoeff
Gated      CloseTime
-----
OR1          SWM_Facility  J2          SIDE      110.2       0.61
NO          0
OR2          SWM_Facility  J2          SIDE      110.6       0.61
NO          0

[WEIRS]
;;Name      From Node      To Node      Type      CrestHt      Qcoeff
Gated      EndCon      EndCoeff      Surcharge  RoadWidth    RoadSurf    Coeff. Curve
-----
W1          SWM_Facility  J2          TRAPEZOIDAL 111         1.84
NO          2          0          NO

[OUTLETS]
;;Name      From Node      To Node      Offset      Type
QTable/Qcoeff  Qexpon      Gated
-----

```

```

Swale-RY4      TRAPEZOIDAL 0.6      0      3      3      1
Swale-RY5      TRAPEZOIDAL 0.6      0      3      3      1
Swale-RY6      TRAPEZOIDAL 0.6      0      3      3      1
OR1            CIRCULAR    0.2      0      0      0      0
OR2            RECT_CLOSED 0.375    1.5    0      0      0
W1             TRAPEZOIDAL 0.3      4      3      3      3

[TRANSECTS]
;;Transect Data in HEC-2 format
;
;Cross Section based on the LiDAR information
NC 0.045 0.045 0.035
X1 ExistingDitch 10 25 31 0.0 0.0 0.0 0.0
0.0
GR 110.634 23 110.616 24 110.537 25 110.236 26
109.826 27
GR 109.8 28 110.11 29 110.525 30 110.557 31
110.465 32

[LOSSES]
;;Link Kentry Kexit Kavg Flap Gate Seepage
;-----

[CURVES]
;;Name Type X-Value Y-Value
;-----
;1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-10 Rating 0 0
BLCK-10 0.005 0.167
BLCK-10 0.35 0.167
BLCK-10 0.6 0.169

;1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-11 Rating 0 0
BLCK-11 0.005 0.193
BLCK-11 0.35 0.193
BLCK-11 0.6 0.195

;1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-12 Rating 0 0
BLCK-12 0.005 0.203
BLCK-12 0.35 0.203
BLCK-12 0.6 0.205

;1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-2 Rating 0 0
BLCK-2 0.01 0.146
BLCK-2 0.35 0.146
BLCK-2 0.6 0.148

;1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-2R Rating 0 0
BLCK-2R 0.01 0.02
BLCK-2R 0.35 0.02
BLCK-2R 0.6 0.02

;1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-3 Rating 0 0
BLCK-3 0.01 0.102
BLCK-3 0.35 0.102
BLCK-3 0.6 0.102

;1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-3R Rating 0 0
BLCK-3R 0.01 0.064
BLCK-3R 0.35 0.064
BLCK-3R 0.6 0.066

;1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-4 Rating 0 0
BLCK-4 0.005 0.066
BLCK-4 0.35 0.066
BLCK-4 0.6 0.068

;1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-4R Rating 0 0
BLCK-4R 0.01 0.313
BLCK-4R 0.35 0.313
BLCK-4R 0.6 0.315

;1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-5 Rating 0 0
BLCK-5 0.005 0.069
BLCK-5 0.35 0.069
BLCK-5 0.6 0.071

;1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-5R Rating 0 0
BLCK-5R 0.01 0.12
BLCK-5R 0.35 0.12
BLCK-5R 0.6 0.122

;1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-6 Rating 0 0
BLCK-6 0.005 0.068
BLCK-6 0.35 0.068
BLCK-6 0.6 0.07

;1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-6R Rating 0 0
BLCK-6R 0.01 0.112
BLCK-6R 0.35 0.112
BLCK-6R 0.6 0.114

;1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-7 Rating 0 0
BLCK-7 0.005 0.372
BLCK-7 0.35 0.372
BLCK-7 0.6 0.374

;1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-8 Rating 0 0
BLCK-8 0.005 0.178
BLCK-8 0.35 0.178
BLCK-8 0.6 0.18

;1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-9 Rating 0 0
BLCK-9 0.005 0.159
BLCK-9 0.35 0.159
BLCK-9 0.6 0.161

;Pond curve developed based on the proposed grading plan for the SWM Facility
Pond Storage 0 535.87
Pond 0.1 2195
Pond 0.2 4260.33
Pond 0.3 6345.89
Pond 0.4 8451.68
Pond 0.5 10555.43
Pond 0.6 11915.67
Pond 0.7 12280.08
Pond 0.8 12464.42
Pond 0.9 12656.64
Pond 1 12856.75
Pond 1.1 13064.75

[TIMESERIES]
;;Name Date Time Value
;-----
;Rainfall (mm/hr)
1960 04/01/1960 00:00:00 0
1960 04/01/1960 01:00:00 0
1960 04/01/1960 02:00:00 0
1960 04/01/1960 03:00:00 0
1960 04/01/1960 04:00:00 0
1960 04/01/1960 05:00:00 0
1960 04/01/1960 06:00:00 0
1960 04/01/1960 07:00:00 0
1960 04/01/1960 08:00:00 0
1960 04/01/1960 09:00:00 0
1960 04/01/1960 10:00:00 0
.....
Too many data points (5143 in total).

;Rainfall (mm/hr)
1961 04/01/1961 06:00:00 0
1961 04/01/1961 07:00:00 0
1961 04/01/1961 08:00:00 0

```

```

1961      04/01/1961 09:00:00  0
1961      04/01/1961 10:00:00  0
1961      04/01/1961 11:00:00  0
1961      04/01/1961 12:00:00  0
1961      04/01/1961 13:00:00  0
1961      04/01/1961 14:00:00  0
1961      04/01/1961 15:00:00  0
1961      04/01/1961 16:00:00  0
.....
Too many data points (5860 in total).

;Rainfall (mm/hr)
1962      01/01/1962 00:00:00  0
1962      01/01/1962 01:00:00  0
1962      01/01/1962 02:00:00  0
1962      01/01/1962 03:00:00  0
1962      01/01/1962 04:00:00  0
1962      01/01/1962 05:00:00  0
1962      01/01/1962 06:00:00  0
1962      01/01/1962 07:00:00  0
1962      01/01/1962 08:00:00  0
1962      01/01/1962 09:00:00  0
1962      01/01/1962 10:00:00  0
.....
Too many data points (7965 in total).

;Rainfall (mm/hr)
1963      01/01/1963 00:00:00  0
1963      01/01/1963 01:00:00  0
1963      01/01/1963 02:00:00  0
1963      01/01/1963 03:00:00  0
1963      01/01/1963 04:00:00  0
1963      01/01/1963 05:00:00  0
1963      03/01/1963 06:00:00  0
1963      03/01/1963 07:00:00  0
1963      03/01/1963 08:00:00  0
1963      03/01/1963 09:00:00  0
1963      03/01/1963 10:00:00  0
.....
Too many data points (7327 in total).

;Rainfall (mm/hr)
OTTRAIN_1960-2010 04/01/1960 06:00:00  0
OTTRAIN_1960-2010 04/01/1960 07:00:00  0
OTTRAIN_1960-2010 04/01/1960 08:00:00  0
OTTRAIN_1960-2010 04/01/1960 09:00:00  0
OTTRAIN_1960-2010 04/01/1960 10:00:00  0
OTTRAIN_1960-2010 04/01/1960 11:00:00  0
OTTRAIN_1960-2010 04/01/1960 12:00:00  0
OTTRAIN_1960-2010 04/01/1960 13:00:00  0
OTTRAIN_1960-2010 04/01/1960 14:00:00  0
OTTRAIN_1960-2010 04/01/1960 15:00:00  0
OTTRAIN_1960-2010 04/01/1960 16:00:00  0
.....
Too many data points (255816 in total).

[REPORT]
;;Reporting Options
INPUT      YES
CONTROLS   NO
SUBCATCHMENTS ALL
NODES ALL
LINKS ALL

[TAGS]
Subcatch  BLCK-10      Development
Subcatch  BLCK-11      Development
Subcatch  BLCK-12      Development
Subcatch  BLCK-2        Development
Subcatch  BLCK-2R      Development
Subcatch  BLCK-3        Development
Subcatch  BLCK-3R      Development
Subcatch  BLCK-4        Development
Subcatch  BLCK-4R      Development
Subcatch  BLCK-5        Development
Subcatch  BLCK-5R      Development
Subcatch  BLCK-6        Development
Subcatch  BLCK-6R      Development
Subcatch  BLCK-7        Development
Subcatch  BLCK-7R      Development
Subcatch  BLCK-8        Development
Subcatch  BLCK-9        Development
Subcatch  EX-1          Existing
Subcatch  EX-2          Existing
Subcatch  EX-3          Existing
Subcatch  S1            ROW
Subcatch  S10           ROW
Subcatch  S11           ROW
Subcatch  S12           ROW
Subcatch  S13           ROW
Subcatch  S14           ROW
Subcatch  S15           ROW
Subcatch  S16           ROW
Subcatch  S2            ROW
Subcatch  S3            ROW
Subcatch  S4            ROW

Subcatch  S5            ROW
Subcatch  S6            ROW
Subcatch  S7            ROW
Subcatch  S8            ROW
Subcatch  S9            ROW
Subcatch  SWM_Block     SWM_Block
Subcatch  SWR-1         Swale
Subcatch  SWR-2         Swale
Subcatch  SWR-3         Swale
Subcatch  SWR-4         Swale
Subcatch  SWR-5         Swale
Subcatch  SWR-6         Swale
Node      St_BLCK-10    On-Site_Storage
Node      St_BLCK-11    On-Site_Storage
Node      St_BLCK-12    On-Site_Storage
Node      St_BLCK-2     On-Site_Storage
Node      St_BLCK-2R    On-Site_Storage
Node      St_BLCK-3     On-Site_Storage
Node      St_BLCK-3R    On-Site_Storage
Node      St_BLCK-4     On-Site_Storage
Node      St_BLCK-4R    On-Site_Storage
Node      St_BLCK-5     On-Site_Storage
Node      St_BLCK-5R    On-Site_Storage
Node      St_BLCK-6     On-Site_Storage
Node      St_BLCK-6R    On-Site_Storage
Node      St_BLCK-7     On-Site_Storage
Node      St_BLCK-8     On-Site_Storage
Node      St_BLCK-9     On-Site_Storage
Node      SWM_Facility  SWM_Facility
Link      C3            Swale
Link      CULV-1        Culvert
Link      Ditch-2       Ditch
Link      Ditch-3       Ditch
Link      Swale-1        Swale
Link      Swale-10       Swale
Link      Swale-10A      Swale
Link      Swale-11       Swale
Link      Swale-11A      Swale
Link      Swale-12       Swale
Link      Swale-13       Swale
Link      Swale-14       Swale
Link      Swale-15       Swale
Link      Swale-15A      Swale
Link      Swale-16       Swale
Link      Swale-17       Swale
Link      Swale-2        Swale
Link      Swale-3        Swale
Link      Swale-4        Swale
Link      Swale-5        Swale
Link      Swale-5A       Swale
Link      Swale-6        Swale
Link      Swale-6A       Swale
Link      Swale-7        Swale
Link      Swale-8        Swale
Link      Swale-9        Swale
Link      Swale-RY1_1    Swale
Link      Swale-RY1_2    Swale
Link      Swale-RY2      Swale
Link      Swale-RY3      Swale
Link      Swale-RY4      Swale
Link      Swale-RY5      Swale
Link      Swale-RY6      Swale

[MAP]
DIMENSIONS 343500.6446 5019613.1261 344846.1074 5021427.1119
UNITS      Meters

[COORDINATES]
;;Node      X-Coord      Y-Coord
;;-----

[POLYGONS]
;;Subcatchment X-Coord      Y-Coord

;;Storage Node X-Coord      Y-Coord
;;-----

[SYMBOLS]
;;Gage      X-Coord      Y-Coord
;;-----

```

WB POST NO LID OUTPUT (51 years of rainfall data: 1960-2010)

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.2 (Build 5.2.4)

WARNING 02: maximum depth increased for Node J11
WARNING 02: maximum depth increased for Node J12
WARNING 02: maximum depth increased for Node J13
WARNING 02: maximum depth increased for Node J24
WARNING 02: maximum depth increased for Node J25
WARNING 02: maximum depth increased for Node J26
WARNING 02: maximum depth increased for Node J3
WARNING 02: maximum depth increased for Node J33
WARNING 02: maximum depth increased for Node J4
WARNING 02: maximum depth increased for Node J5

Element Count

Number of rain gages 1
Number of subcatchments ... 43
Number of nodes 52
Number of links 52
Number of pollutants 0
Number of land uses 0

Raingage Summary

Name	Data Source	Data Type	Recording Interval
Rainfall	OTTRAIN_1960-2010	INTENSITY	60 min.

Subcatchment Summary

Name	Area	Width	%Imperv	%Slope	Rain Gage
BLCK-10	1.20	269.60	40.00	2.0000	Rainfall
St_BLCK-10					
BLCK-11	1.39	311.67	40.00	2.0000	Rainfall
St_BLCK-11					
BLCK-12	1.46	329.09	40.00	2.0000	Rainfall
St_BLCK-12					
BLCK-2	1.05	236.61	40.00	2.0000	Rainfall
St_BLCK-2					
BLCK-2R	0.15	33.12	40.00	2.0000	Rainfall
St_BLCK-2R					
BLCK-3	0.74	165.44	40.00	2.0000	Rainfall
St_BLCK-3					
BLCK-3R	0.46	104.27	40.00	2.0000	Rainfall
St_BLCK-3R					
BLCK-4	0.48	107.51	40.00	2.0000	Rainfall
St_BLCK-4					
BLCK-4R	2.25	506.91	40.00	2.0000	Rainfall
St_BLCK-4R					
BLCK-5	0.50	111.94	40.00	2.0000	Rainfall
St_BLCK-5					
BLCK-5R	0.87	194.85	40.00	2.0000	Rainfall
St_BLCK-5R					
BLCK-6	0.49	110.03	40.00	2.0000	Rainfall
St_BLCK-6					
BLCK-6R	0.80	180.90	40.00	2.0000	Rainfall
St_BLCK-6R					
BLCK-7	2.67	601.48	40.00	2.0000	Rainfall
St_BLCK-7					
BLCK-7R	0.29	64.17	0.00	2.0000	Rainfall
St_BLCK-7R					J2
BLCK-8	1.28	288.00	40.00	2.0000	Rainfall
St_BLCK-8					
BLCK-9	1.14	257.43	40.00	2.0000	Rainfall
St_BLCK-9					
EX-1	6.99	478.16	13.98	5.3800	Rainfall
J21					
EX-2	1.86	159.36	0.00	5.1230	Rainfall
St_EX-2					J1
EX-3	2.29	496.25	24.34	5.4260	Rainfall
St_EX-3					J6
S1	0.22	467.81	44.54	3.0000	Rainfall
S10	0.06	114.50	44.54	3.0000	Rainfall
J18					J4
S11	0.06	138.66	44.54	3.0000	Rainfall
J25					
S12	0.07	134.16	44.54	3.0000	Rainfall
J16					
S13	0.08	163.32	44.54	3.0000	Rainfall
J23					
S14	0.28	615.65	44.54	3.0000	Rainfall
J22					
S15	0.12	254.02	44.54	3.0000	Rainfall
J15					
S16	0.18	366.50	44.54	3.0000	Rainfall
J14					
S2	0.21	435.79	44.54	3.0000	Rainfall
S3	0.08	161.65	44.54	3.0000	Rainfall
					J8
					J5

S4	0.07	161.51	44.54	3.0000	Rainfall	J7
S5	0.08	166.67	44.54	3.0000	Rainfall	
J11						
S6	0.14	283.83	44.54	3.0000	Rainfall	J9
S7	0.08	169.35	44.54	3.0000	Rainfall	
J12						
S8	0.09	200.82	44.54	3.0000	Rainfall	
J19						
S9	0.09	200.65	44.54	3.0000	Rainfall	
J26						
SWM_Block	1.78	966.87	28.50	2.0000	Rainfall	
SWM_Facility						
SWR-1	0.10	191.80	0.00	2.0000	Rainfall	
J35						
SWR-2	0.10	199.00	0.00	2.0000	Rainfall	
J28						
SWR-3	0.18	356.80	0.00	2.0000	Rainfall	
J30						
SWR-4	0.09	187.00	0.00	2.0000	Rainfall	
J31						
SWR-5	0.07	134.60	0.00	2.0000	Rainfall	
J32						
SWR-6	0.07	149.40	0.00	2.0000	Rainfall	
J33						

Node Summary

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
J1	JUNCTION	114.45	1.00	0.0	
J10	JUNCTION	113.00	0.60	0.0	
J11	JUNCTION	113.95	1.20	0.0	
J12	JUNCTION	113.89	1.20	0.0	
J13	JUNCTION	114.33	1.20	0.0	
J14	JUNCTION	113.92	1.20	0.0	
J15	JUNCTION	113.56	1.20	0.0	
J16	JUNCTION	113.36	1.20	0.0	
J17	JUNCTION	113.30	1.20	0.0	
J18	JUNCTION	113.41	1.20	0.0	
J19	JUNCTION	113.69	1.20	0.0	
J2	JUNCTION	110.15	1.00	0.0	
J20	JUNCTION	113.85	1.20	0.0	
J21	JUNCTION	114.35	1.20	0.0	
J22	JUNCTION	113.60	1.20	0.0	
J23	JUNCTION	113.40	1.20	0.0	
J24	JUNCTION	111.18	3.30	0.0	
J25	JUNCTION	113.44	1.20	0.0	
J26	JUNCTION	113.66	1.20	0.0	
J27	JUNCTION	112.72	0.60	0.0	
J28	JUNCTION	112.45	0.60	0.0	
J3	JUNCTION	114.92	1.20	0.0	
J30	JUNCTION	111.91	0.60	0.0	
J31	JUNCTION	111.41	0.60	0.0	
J32	JUNCTION	111.14	0.60	0.0	
J33	JUNCTION	110.87	1.20	0.0	
J35	JUNCTION	112.76	0.60	0.0	
J4	JUNCTION	114.41	1.20	0.0	
J5	JUNCTION	114.17	1.20	0.0	
J6	JUNCTION	114.89	1.20	0.0	
J7	JUNCTION	114.14	1.20	0.0	
J8	JUNCTION	114.39	1.20	0.0	
J9	JUNCTION	113.85	1.20	0.0	
CARP	OUTFALL	91.00	0.00	0.0	
OP2	OUTFALL	109.62	0.83	0.0	
St_BLCK-10	STORAGE	115.19	0.50	0.0	
St_BLCK-11	STORAGE	115.89	0.50	0.0	
St_BLCK-12	STORAGE	115.35	0.50	0.0	
St_BLCK-2	STORAGE	115.91	0.50	0.0	
St_BLCK-2R	STORAGE	114.26	0.50	0.0	
St_BLCK-3	STORAGE	115.45	0.50	0.0	
St_BLCK-3R	STORAGE	114.22	0.50	0.0	
St_BLCK-4	STORAGE	115.39	0.50	0.0	
St_BLCK-4R	STORAGE	113.41	0.50	0.0	
St_BLCK-5	STORAGE	115.16	0.50	0.0	
St_BLCK-5R	STORAGE	112.64	0.50	0.0	
St_BLCK-6	STORAGE	114.94	0.50	0.0	
St_BLCK-6R	STORAGE	112.37	0.50	0.0	

St_BLK-7	STORAGE	112.68	0.50	0.0						
St_BLK-8	STORAGE	114.90	0.50	0.0						
St_BLK-9	STORAGE	114.91	0.50	0.0						
SWM_Facility	STORAGE	110.20	1.10	0.0						

Link Summary										

Name	From Node	To Node	Type	Length	%Slope	Full Conduit Flow	Full Area	Hyd. Rad.	Max. Width	No. of Barrels

C3	J33	SWM_Facility	CONDUIT	5.0	2.3807	13.08	4.32	0.57	7.20	1
0.0350										
CULV-1	J17	J24	CONDUIT	11.6	0.1991	0.27	0.44	0.19	0.75	1
0.0240										
Ditch-2	J1	J2	CONDUIT	211.8	2.0311	10.88	4.00	0.55	7.00	1
0.0350										
Ditch-3	J2	OF2	CONDUIT	95.2	0.5536	3.45	2.95	0.41	9.00	1
0.0350										
Swale-1	J3	J4	CONDUIT	169.0	0.3000	4.64	4.32	0.57	7.20	1
0.0350										
Swale-10	J18	J17	CONDUIT	35.3	0.2999	4.64	4.32	0.57	7.20	1
0.0350										
Swale-10A	J16	J17	CONDUIT	20.4	0.2987	4.63	4.32	0.57	7.20	1
0.0350										
Swale-11	J25	J24	CONDUIT	53.1	0.2996	4.64	4.32	0.57	7.20	1
0.0350										
Swale-11A	J23	J24	CONDUIT	41.0	0.2998	4.64	4.32	0.57	7.20	1
0.0350										
Swale-12	J15	J16	CONDUIT	67.3	0.3002	4.65	4.32	0.57	7.20	1
0.0350										
Swale-13	J22	J23	CONDUIT	65.5	0.2993	4.64	4.32	0.57	7.20	1
0.0350										
Swale-14	J21	J22	CONDUIT	251.6	0.3001	4.64	4.32	0.57	7.20	1
0.0350										
Swale-15	J20	J15	CONDUIT	95.5	0.3004	4.65	4.32	0.57	7.20	1
0.0350										
Swale-15A	J14	J20	CONDUIT	23.4	0.2990	4.64	4.32	0.57	7.20	1
0.0350										
Swale-16	J13	J14	CONDUIT	138.0	0.3000	4.64	4.32	0.57	7.20	1
0.0350										
Swale-17	J24	SWM_Facility	CONDUIT	5.0	5.5485	19.97	4.32	0.57	7.20	1
0.0350										
Swale-2	J6	J8	CONDUIT	168.2	0.2997	4.64	4.32	0.57	7.20	1
0.0350										
Swale-3	J4	J5	CONDUIT	78.6	0.3003	4.65	4.32	0.57	7.20	1
0.0350										
Swale-4	J8	J7	CONDUIT	79.9	0.3004	4.65	4.32	0.57	7.20	1
0.0350										
Swale-5	J5	J11	CONDUIT	72.9	0.3005	4.65	4.32	0.57	7.20	1
0.0350										
Swale-5A	J11	J12	CONDUIT	22.4	0.2993	4.64	4.32	0.57	7.20	1
0.0350										
Swale-6	J7	J9	CONDUIT	98.3	0.3001	4.64	4.32	0.57	7.20	1
0.0350										
Swale-6A	J9	J19	CONDUIT	54.7	0.2996	4.64	4.32	0.57	7.20	1
0.0350										
Swale-7	J12	J26	CONDUIT	74.4	0.2996	4.64	4.32	0.57	7.20	1
0.0350										
Swale-8	J19	J18	CONDUIT	92.8	0.3005	4.65	4.32	0.57	7.20	1
0.0350										
Swale-9	J26	J25	CONDUIT	75.4	0.2996	4.64	4.32	0.57	7.20	1
0.0350										
Swale-RY1_1	J10	J35	CONDUIT	81.1	0.2997	0.73	1.08	0.28	3.60	1
0.0350										
Swale-RY1_2	J35	J27	CONDUIT	13.7	0.2993	0.73	1.08	0.28	3.60	1
0.0350										
Swale-RY2	J27	J28	CONDUIT	89.8	0.3005	0.73	1.08	0.28	3.60	1
0.0350										
Swale-RY3	J28	J30	CONDUIT	179.9	0.3001	0.73	1.08	0.28	3.60	1
0.0350										
Swale-RY4	J30	J31	CONDUIT	164.4	0.2999	0.73	1.08	0.28	3.60	1
0.0350										
Swale-RY5	J31	J32	CONDUIT	92.1	0.2996	0.73	1.08	0.28	3.60	1
0.0350										
Swale-RY6	J32	J33	CONDUIT	89.3	0.3002	0.73	1.08	0.28	3.60	1
0.0350										
OR1	SWM_Facility	J2	ORIFICE							
OR2	SWM_Facility	J2	ORIFICE							
W1	SWM_Facility	J2	WEIR							
O_BLK-10	St_BLK-10	J19	OUTLET							
O_BLK-11	St_BLK-11	J8	OUTLET							
O_BLK-12	St_BLK-12	J20	OUTLET							
O_BLK-2	St_BLK-2	J4	OUTLET							
O_BLK-2R	St_BLK-2R	J35	OUTLET							
O_BLK-3	St_BLK-3	J11	OUTLET							
O_BLK-4	St_BLK-4	J12	OUTLET							
O_BLK-5	St_BLK-5	J26	OUTLET							
O_BLK-5R	St_BLK-5R	J32	OUTLET							
O_BLK-6	St_BLK-6	J25	OUTLET							
O_BLK-6R	St_BLK-6R	J33	OUTLET							
O_BLK-7	St_BLK-7	J24	OUTLET							
O_BLK-8	St_BLK-8	J23	OUTLET							
O_BLK-9	St_BLK-9	J18	OUTLET							
O_St_BLK-3R	St_BLK-3R	J27	OUTLET							
O_St_BLK-4R	St_BLK-4R	J30	OUTLET							

St_BLK-9	STORAGE	0.100	0.100	10352	15:00	77.5
77.5	-0.239					
SWM_Facility	STORAGE	0.153	2.167	10352	15:00	93.4
1.43e+03	-0.000					

Node Surcharge Summary

No nodes were surcharged.

Node Flooding Summary

No nodes were flooded.

Storage Volume Summary

Maximum	Average	Avg	Evap	Exfil	Maximum	Max	Time of Max
	Volume	Pcnt	Pcnt	Pcnt	Volume	Pcnt	Occurrence
Outflow							
Storage Unit	1000 m ³	Full	Loss	Loss	1000 m ³	Full	days hr:min
CMS							

St_BLK-10	0.000	0.0	0.0	0.0	0.001	0.6	10352
15:00 0.106							
St_BLK-11	0.000	0.0	0.0	0.0	0.000	0.6	10352
15:00 0.107							
St_BLK-12	0.000	0.0	0.0	0.0	0.000	0.5	10352
15:00 0.106							
St_BLK-2	0.000	0.0	0.0	0.0	0.001	1.1	10352
15:00 0.078							
St_BLK-2R	0.000	0.0	0.0	0.0	0.000	1.1	10352
15:00 0.011							
St_BLK-3	0.000	0.0	0.0	0.0	0.001	1.2	10352
15:00 0.064							
St_BLK-3R	0.000	0.0	0.0	0.0	0.000	1.2	10352
15:00 0.038							
St_BLK-4	0.000	0.0	0.0	0.0	0.000	0.6	10352
15:00 0.042							
St_BLK-4R	0.000	0.0	0.0	0.0	0.002	1.3	10352
15:00 0.199							
St_BLK-5	0.000	0.0	0.0	0.0	0.000	0.6	10352
15:00 0.044							
St_BLK-5R	0.000	0.0	0.0	0.0	0.001	1.3	10352
15:00 0.077							
St_BLK-6	0.000	0.0	0.0	0.0	0.000	0.6	10352
15:00 0.043							
St_BLK-6R	0.000	0.0	0.0	0.0	0.001	1.3	10352
15:00 0.071							
St_BLK-7	0.000	0.0	0.0	0.0	0.001	0.5	10352
15:00 0.204							
St_BLK-8	0.000	0.0	0.0	0.0	0.000	0.5	10352
15:00 0.092							
St_BLK-9	0.000	0.0	0.0	0.0	0.001	0.6	10352
15:00 0.100							
SWM_Facility	0.019	0.2	0.0	0.0	8.128	80.6	16232
14:12 1.392							

Outfall Loading Summary

Outfall Node	Flow Freq	Avg Flow	Max Flow	Total Volume
	Pcnt	CMS	CMS	10 ⁶ ltr
CARP	91.75	0.001	32.968	1059.645
OF2	10.07	0.009	1.496	1483.869
System	50.91	0.010	32.968	2543.514

Link Flow Summary

Link	Type	Maximum Flow	Time of Max Occurrence	Maximum Veloc	Max/ Full Flow	Max/ Full Depth
		CMS	days hr:min	m/sec		
C3	CONDUIT	0.430	10352 15:00	1.29	0.03	0.29
CULV-1	CONDUIT	0.651	10352 15:01	1.77	2.42	0.77
Ditch-2	CONDUIT	0.139	10352 15:00	0.37	0.01	0.34
Ditch-3	CHANNEL	1.496	16232 14:12	1.03	0.43	0.69

Swale-1	CONDUIT	0.000	0	00:00	0.00	0.00	0.12
Swale-10	CONDUIT	0.525	10352	15:00	0.48	0.11	0.52
Swale-10A	CONDUIT	0.138	10352	15:06	0.22	0.03	0.53
Swale-11	CONDUIT	0.320	10352	15:00	0.70	0.07	0.33
Swale-11A	CONDUIT	0.414	10352	15:01	0.79	0.09	0.35
Swale-12	CONDUIT	0.124	10352	15:00	0.29	0.03	0.42
Swale-13	CONDUIT	0.330	16232	14:01	0.49	0.07	0.40
Swale-14	CONDUIT	0.317	16232	14:00	0.54	0.07	0.37
Swale-15	CONDUIT	0.119	10352	15:00	0.39	0.03	0.30
Swale-15A	CONDUIT	0.014	10352	15:01	0.22	0.00	0.22
Swale-16	CONDUIT	0.000	0	00:00	0.00	0.00	0.10
Swale-17	CONDUIT	1.585	10352	15:00	2.45	0.08	0.39
Swale-2	CONDUIT	0.173	10352	15:00	0.38	0.04	0.32
Swale-3	CONDUIT	0.095	10352	15:00	0.40	0.02	0.24
Swale-4	CONDUIT	0.295	10352	15:00	0.54	0.06	0.36
Swale-5	CONDUIT	0.101	10352	15:00	0.32	0.02	0.27
Swale-5A	CONDUIT	0.172	10352	15:00	0.41	0.04	0.31
Swale-6	CONDUIT	0.300	10352	15:00	0.53	0.06	0.36
Swale-6A	CONDUIT	0.311	10352	15:01	0.49	0.07	0.39
Swale-7	CONDUIT	0.221	10352	15:00	0.46	0.05	0.33
Swale-8	CONDUIT	0.424	10352	15:00	0.49	0.09	0.45
Swale-9	CONDUIT	0.272	10352	15:00	0.45	0.06	0.37
Swale-RY1_1	CONDUIT	0.000	0	00:00	0.00	0.00	0.16
Swale-RY1_2	CONDUIT	0.015	10352	15:00	0.15	0.02	0.34
Swale-RY2	CONDUIT	0.053	10352	15:00	0.34	0.07	0.38
Swale-RY3	CONDUIT	0.058	10352	15:00	0.19	0.08	0.54
Swale-RY4	CONDUIT	0.269	10352	15:00	0.52	0.37	0.69
Swale-RY5	CONDUIT	0.274	10352	15:00	0.43	0.38	0.77
Swale-RY6	CONDUIT	0.354	10352	15:00	0.66	0.48	0.70
OR1	ORIFICE	0.055	16232	15:15			1.00
OR2	ORIFICE	0.914	16232	14:12			1.00
W1	WEIR	0.423	16232	14:12			0.50
O_BLK-10	DUMMY	0.106	10352	15:00			
O_BLK-11	DUMMY	0.107	10352	15:00			
O_BLK-12	DUMMY	0.106	10352	15:00			
O_BLK-2	DUMMY	0.078	10352	15:00			
O_BLK-2R	DUMMY	0.011	10352	15:00			
O_BLK-3	DUMMY	0.064	10352	15:00			
O_BLK-4	DUMMY	0.042	10352	15:00			
O_BLK-5	DUMMY	0.044	10352	15:00			
O_BLK-5R	DUMMY	0.077	10352	15:00			
O_BLK-6	DUMMY	0.043	10352	15:00			
O_BLK-6R	DUMMY	0.071	10352	15:00			
O_BLK-7	DUMMY	0.204	10352	15:00			
O_BLK-8	DUMMY	0.092	10352	15:00			
O_BLK-9	DUMMY	0.100	10352	15:00			
O_St_BLK-3R	DUMMY	0.038	10352	15:00			
O_St_BLK-4R	DUMMY	0.199	10352	15:00			

Flow Classification Summary

Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class								
		Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl	
C3	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
CULV-1	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Ditch-2	1.00	0.10	0.88	0.00	0.03	0.00	0.00	0.00	1.00	0.00
Ditch-3	1.00	0.10	0.00	0.00	0.90	0.00	0.00	0.00	0.83	0.00
Swale-1	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Swale-10	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Swale-10A	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.15	0.00
Swale-11	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Swale-11A	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Swale-12	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
Swale-13	1.00	0.00	0.04	0.00	0.96	0.00	0.00	0.00	1.00	0.00
Swale-14	1.00	0.03	0.55	0.00	0.42	0.00	0.00	0.00	0.98	0.00
Swale-15	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.97	0.00
Swale-15A	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
Swale-16	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Swale-17	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Swale-2	1.00	0.00	0.21	0.00	0.79	0.00	0.00	0.00	1.00	0.00
Swale-3	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
Swale-4	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.96	0.00
Swale-5	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.98	0.00
Swale-5A	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
Swale-6	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
Swale-6A	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.97	0.00
Swale-7	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.96	0.00
Swale-8	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
Swale-9	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
Swale-RY1_1	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Swale-RY1_2	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.98	0.00
Swale-RY2	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.98	0.00
Swale-RY3	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.97	0.00
Swale-RY4	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.99	0.00
Swale-RY5	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.97	0.00
Swale-RY6	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.95	0.00

Conduit Surcharge Summary

Conduit	Hours Full			Hours Above Full	Hours Capacity
	Both Ends	Upstream	Dnstream	Normal Flow	Limited
CULV-1	0.01	0.01	0.01	15.53	0.01

Analysis begun on: Mon Mar 3 14:14:06 2025
Analysis ended on: Mon Mar 3 19:48:29 2025
Total elapsed time: 05:34:23

WB POST – LID (51 years of rainfall data: 1960-2010)

```
[TITLE]
;;Project Title/Notes

[OPTIONS]
;;Option Value
FLOW UNITS CMS
INFILTRATION CURVE_NUMBER
FLOW_ROUTING DYNWAVE
LINK_OFFSETS ELEVATION
MIN_SLOPE 0
ALLOW_PONDING NO
SKIP_STEADY_STATE NO

START_DATE 04/01/1960
START_TIME 06:00:00
REPORT_START_DATE 04/01/1960
REPORT_START_TIME 06:00:00
END_DATE 12/01/2010
END_TIME 06:00:00
SWEEP_START 01/01
SWEEP_END 12/31
DRY_DAYS 0
REPORT_STEP 00:01:00
WET_STEP 00:01:00
DRY_STEP 00:05:00
ROUTING_STEP 1
RULE_STEP 00:00:00

INERTIAL_DAMPING PARTIAL
NORMAL_FLOW_LIMITED BOTH
FORCE_MAIN_EQUATION H-W
VARIABLE_STEP 0.75
LENGTHENING_STEP 0
MIN_SURFAREA 0
MAX_TRIALS 8
HEAD_TOLERANCE 0.0015
SYS_FLOW_TOL 5
LAT_FLOW_TOL 5
MINIMUM_STEP 0.5
THREADS 22

[EVAPORATION]
;;Data Source Parameters
;;-----
MONTHLY 0.0 0.0 0.0 0.0 3.6 4.3 4.5 3.7 2.4
1.4 0.0 0.0
DRY_ONLY NO

[TEMPERATURE]
FILE "C:\Users\ldzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Continuous
Simulation\Temperature\OTT_TEMP_1960-2010.dat" 04/01/1960 C10
WINDSPEED MONTHLY 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
SNOWMELT 0 0.9 0.6 115.8 45 0.0
ADC IMPERVIOUS 0.1 0.35 0.53 0.66 0.75 0.82 0.87 0.92 0.95 0.98
ADC PERVIOUS 0.1 0.35 0.53 0.66 0.75 0.82 0.87 0.92 0.95 0.98

[RAINGAGES]
;;Name Format Interval SCF Source
;;-----
Rainfall INTENSITY 1:00 1.0 TIMESERIES OTTRAIN_1960-2010

[SUBCATCHMENTS]
;;Name Rain Gage Outlet Area %Imperv Width
%Slope CurbLen SnowPack
;;-----
;D
BLCK-10 Rainfall St_BLCK-10 1.1982 40 269.598 2
0 Existing
;B
BLCK-11 Rainfall St_BLCK-11 1.3852 40 311.673 2
0 Existing
;B
BLCK-12 Rainfall St_BLCK-12 1.4626 40 329.088 2
0 Existing
;B
BLCK-2 Rainfall St_BLCK-2 1.0516 40 236.612 2
0 Existing
;B
BLCK-2R Rainfall St_BLCK-2R 0.1472 40 33.12 2
0 Existing
;D
BLCK-3 Rainfall St_BLCK-3 0.7353 40 165.444 2
0 Existing
;D
BLCK-3R Rainfall St_BLCK-3R 0.4634 40 104.266 2
0 Existing
;D
BLCK-4 Rainfall St_BLCK-4 0.4778 40 107.506 2
0 Existing
;D
BLCK-4R Rainfall St_BLCK-4R 2.2529 40 506.908 2
0 Existing
;D
```

```
BLCK-5 Rainfall St_BLCK-5 0.4975 40 111.939 2
0 Existing
;D
BLCK-5R Rainfall St_BLCK-5R 0.866 40 194.852 2
0 Existing
;D
BLCK-6 Rainfall St_BLCK-6 0.489 40 110.026 2
0 Existing
;D
BLCK-6R Rainfall St_BLCK-6R 0.804 40 180.902 2
0 Existing
;D
BLCK-7 Rainfall St_BLCK-7 2.6732 40 601.476 2
0 Existing
;D
BLCK-7R Rainfall J2 0.2852 0 64.171 2
0 Existing
;B
BLCK-8 Rainfall St_BLCK-8 1.28 40 288.003 2
0 Existing
;D
BLCK-9 Rainfall St_BLCK-9 1.1441 40 257.425 2
0 Existing
;B
EX-1 Rainfall J21 6.9852 13.98 478.16
5.38 0 Existing
;B
EX-2 Rainfall J1 1.8572 0 159.364
5.123 0 Existing
;B
EX-3 Rainfall J6 2.2934 24.341 496.246
5.426 0 Existing
;B
S1 Rainfall J4 0.2209 44.538 467.81 3
0 Existing
;D
S10 Rainfall J18 0.057 44.538 114.504 3
0 Existing
;D
S11 Rainfall J25 0.0642 44.538 138.661 3
0 Existing
;D
S12 Rainfall J16 0.067 44.538 134.161 3
0 Existing
;D
S13 Rainfall J23 0.0757 44.538 163.323 3
0 Existing
;B
S14 Rainfall J22 0.2848 44.538 615.651 3
0 Existing
;B
S15 Rainfall J15 0.1184 44.538 254.023 3
0 Existing
;B
S16 Rainfall J14 0.1805 44.538 366.497 3
0 Existing
;B
S2 Rainfall J8 0.2104 44.538 435.791 3
0 Existing
;D
S3 Rainfall J5 0.0752 44.538 161.651 3
0 Existing
;D
S4 Rainfall J7 0.0747 44.538 161.514 3
0 Existing
;D
S5 Rainfall J11 0.0778 44.538 166.667 3
0 Existing
;D
S6 Rainfall J9 0.1401 44.538 283.833 3
0 Existing
;D
S7 Rainfall J12 0.0779 44.538 169.348 3
0 Existing
;D
S8 Rainfall J19 0.0925 44.538 200.825 3
0 Existing
;D
S9 Rainfall J26 0.0928 44.538 200.649 3
0 Existing
;D
SWM_Block Rainfall SWM_Facility 1.7832 28.5 966.871 2
0 Existing
;B
SWR-1 Rainfall J35 0.0959 0 191.8 2
0 Existing
;D
SWR-2 Rainfall J28 0.0995 0 199 2
0 Existing
;D
SWR-3 Rainfall J30 0.1784 0 356.8 2
0 Existing
;D
SWR-4 Rainfall J31 0.0935 0 187 2
0 Existing
;D
```

SWR-5 0	Existing	Rainfall	J32	0.0673	0	134.6	2	SWR-6 100	0.013	0.25	1.57	4.67	0	PERVIOUS
[SUBAREAS]								[INFILTRATION]						
;;Subcatchment								;;Subcatchment						
PctRouted								Param1 Param2 Param3 Param4 Param5						
-----								-----						
BLCK-10 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-10	80	0.5	7	0	0	0	
BLCK-11 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-11	67.689	0.5	7	0	0	0	
BLCK-12 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-12	62.141	0.5	7	0	0	0	
BLCK-2 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-2	64.484	0.5	7	0	0	0	
BLCK-2R 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-2R	61	0.5	7	0	0	0	
BLCK-3 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-3	78.316	0.5	7	0	0	0	
BLCK-3R 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-3R	72.528	0.5	7	0	0	0	
BLCK-4 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-4	80	0.5	7	0	0	0	
BLCK-4R 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-4R	80	0.5	7	0	0	0	
BLCK-5 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-5	80	0.5	7	0	0	0	
BLCK-5R 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-5R	80	0.5	7	0	0	0	
BLCK-6 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-6	80	0.5	7	0	0	0	
BLCK-6R 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-6R	80	0.5	7	0	0	0	
BLCK-7 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-7	66.873	0.5	7	0	0	0	
BLCK-7R 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-7R	80	0.5	7	0	0	0	
BLCK-8 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-8	61	0.5	7	0	0	0	
BLCK-9 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-9	79.33	0.5	7	0	0	0	
EX-1 100	0.013	0.25	1.57	4.67	0	PERVIOUS	EX-1	57.493	0.5	7	0	0	0	
EX-2 100	0.013	0.25	1.57	4.67	0	PERVIOUS	EX-2	83.145	0	7	0	0	0	
EX-3 100	0.013	0.25	1.57	4.67	0	PERVIOUS	EX-3	73.102	0	7	0	0	0	
S1 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S1	67.673	0.5	7	0	0	0	
S10 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S10	81.874	0.5	7	0	0	0	
S11 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S11	81.642	0.5	7	0	0	0	
S12 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S12	81.882	0.5	7	0	0	0	
S13 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S13	79.073	0.5	7	0	0	0	
S14 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S14	65.088	0.5	7	0	0	0	
S15 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S15	68.244	0.5	7	0	0	0	
S16 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S16	65.029	0.5	7	0	0	0	
S2 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S2	68.084	0.5	7	0	0	0	
S3 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S3	81.778	0.5	7	0	0	0	
S4 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S4	81.79	0.5	7	0	0	0	
S5 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S5	81.629	0.5	7	0	0	0	
S6 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S6	81.866	0.5	7	0	0	0	
S7 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S7	81.677	0.5	7	0	0	0	
S8 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S8	81.788	0.5	7	0	0	0	
S9 100	0.013	0.25	1.57	4.67	0	PERVIOUS	S9	81.779	0.5	7	0	0	0	
SWM_Block 100	0.013	0.25	1.57	4.67	0	PERVIOUS	SWM_Block	80	0.5	7	0	0	0	
SWR-1 100	0.013	0.25	1.57	4.67	0	PERVIOUS	SWR-1	61	0.5	7	0	0	0	
SWR-2 100	0.013	0.25	1.57	4.67	0	PERVIOUS	SWR-2	66.88	0.5	7	0	0	0	
SWR-3 100	0.013	0.25	1.57	4.67	0	PERVIOUS	SWR-3	80	0.5	7	0	0	0	
SWR-4 100	0.013	0.25	1.57	4.67	0	PERVIOUS	SWR-4	80	0.5	7	0	0	0	
SWR-5 100	0.013	0.25	1.57	4.67	0	PERVIOUS	SWR-5	80	0.5	7	0	0	0	
SWR-6 100	0.013	0.25	1.57	4.67	0	PERVIOUS	SWR-6	80	0.5	7	0	0	0	
[LID_CONTROLS]								[LID_CONTROLS]						
;;Name								;;Name						
Type/Layer								Type/Layer						
Parameters								Parameters						
-----								-----						
S10 100	0.013	0.25	1.57	4.67	0	PERVIOUS	Infiltration_B	IT						
S11 100	0.013	0.25	1.57	4.67	0	PERVIOUS	Infiltration_B	SURFACE	500	0.0	0.25	0.5	5	
S12 100	0.013	0.25	1.57	4.67	0	PERVIOUS	Infiltration_B	STORAGE	0.75	0.4	62.5	0	NO	
S13 100	0.013	0.25	1.57	4.67	0	PERVIOUS	Infiltration_B	DRAIN	0	0.5	6	6	0	
S14 100	0.013	0.25	1.57	4.67	0	PERVIOUS	Infiltration_D	IT						
S15 100	0.013	0.25	1.57	4.67	0	PERVIOUS	Infiltration_D	SURFACE	500	0.0	0.25	0.5	5	
S16 100	0.013	0.25	1.57	4.67	0	PERVIOUS	Infiltration_D	STORAGE	0.75	0.40	10.4	0	NO	
S2 100	0.013	0.25	1.57	4.67	0	PERVIOUS	Infiltration_D	DRAIN	0	0.5	6	6	0	
S3 100	0.013	0.25	1.57	4.67	0	PERVIOUS	VegSwale	VS						
S2 100	0.013	0.25	1.57	4.67	0	PERVIOUS	VegSwale	SURFACE	1200	0.1	0.24	0.3	3	
S3 100	0.013	0.25	1.57	4.67	0	PERVIOUS	VegSwale_RY	VS						
S4 100	0.013	0.25	1.57	4.67	0	PERVIOUS	VegSwale_RY	SURFACE	600	0.1	0.24	0.3	3	
[LID_USAGE]								[LID_USAGE]						
;;Subcatchment								;;Subcatchment						
LID Process								LID Process						
Number Area								Number Area						
Width								Width						
InitSat								InitSat						
FromPerv								FromPerv						
-----								-----						
S6 100	0.013	0.25	1.57	4.67	0	PERVIOUS	BLCK-10	Infiltration_D	1	210	14	0	100	
S7 100	0.013	0.25	1.57	4.67	0	PERVIOUS	0	"C:\Users\idzeparoski\OneDrive - Robinson						
S8 100	0.013	0.25	1.57	4.67	0	PERVIOUS	0	Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Infiltration\WB POST LID						
S9 100	0.013	0.25	1.57	4.67	0	PERVIOUS	0	BLCK-10 Infiltration_D.txt" *						
S9 100	0.013	0.25	1.57	4.67	0	PERVIOUS	0	BLCK-11 Infiltration_B	1	240	15	0	100	
S9 100	0.013	0.25	1.57	4.67	0	PERVIOUS	0	"C:\Users\idzeparoski\OneDrive - Robinson						
S9 100	0.013	0.25	1.57	4.67	0	PERVIOUS	0	Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Infiltration\WB POST LID						
S9 100	0.013	0.25	1.57	4.67	0	PERVIOUS	0	BLCK-11 Infiltration_B.txt" *						
S9 100	0.013	0.25	1.57	4.67	0	PERVIOUS	0	BLCK-12 Infiltration_B	1	255	15	0	100	
S9 100	0.013	0.25	1.57	4.67	0	PERVIOUS	0	"C:\Users\idzeparoski\OneDrive - Robinson						
S9 100	0.013	0.25	1.57	4.67	0	PERVIOUS	0	Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Infiltration\WB POST LID						
S9 100	0.013	0.25	1.57	4.67	0	PERVIOUS	0	BLCK-12 Infiltration_B.txt" *						
S9 100	0.013	0.25	1.57	4.67	0	PERVIOUS	0	BLCK-2 Infiltration_B	1	180	12	0	100	
S9 100	0.013	0.25	1.57	4.67	0	PERVIOUS	0	"C:\Users\idzeparoski\OneDrive - Robinson						
S9 100	0.013	0.25	1.57	4.67	0	PERVIOUS	0	Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Infiltration\WB POST LID						
S9 100	0.013	0.25	1.57	4.67	0	PERVIOUS	0	BLCK-2 Infiltration_B.txt" *						

```

BLCK-2R      Infiltration_B 1 25 5 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Infiltration\WB POST LID
BLCK-2R Infiltration_B.txt" *
100
BLCK-3      Infiltration_D 1 132 11 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Infiltration\WB POST LID
BLCK-3 Infiltration_D.txt" *
100
BLCK-3R      Infiltration_B 1 81 9 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Infiltration\WB POST LID
BLCK-3R Infiltration_B.txt" *
100
BLCK-4      Infiltration_D 1 90 9 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Infiltration\WB POST LID
BLCK-4 Infiltration_D.txt" *
100
BLCK-4R      Infiltration_D 1 400 20 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Infiltration\WB POST LID
BLCK-4R Infiltration_D.txt" *
100
BLCK-5      Infiltration_D 1 90 9 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Infiltration\WB POST LID
BLCK-5 Infiltration_D.txt" *
100
BLCK-5R      Infiltration_D 1 180 12 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Infiltration\WB POST LID
BLCK-5R Infiltration_D.txt" *
100
BLCK-6      Infiltration_D 1 90 9 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Infiltration\WB POST LID
BLCK-6 Infiltration_D.txt" *
100
BLCK-6R      Infiltration_D 1 135 9 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Infiltration\WB POST LID
BLCK-6R Infiltration_D.txt" *
100
BLCK-7      Infiltration_B 1 460 20 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Infiltration\WB POST LID
BLCK-7 Infiltration_B.txt" *
100
BLCK-8      Infiltration_B 1 225 15 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Infiltration\WB POST LID
BLCK-8 Infiltration_B.txt" *
100
BLCK-9      Infiltration_D 1 195 13 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Infiltration\WB POST LID
BLCK-9 Infiltration_D.txt" *
100
S1          VegSwale 1 1073 6.7 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID S1 VegSwale.txt" *
100
S10         VegSwale 1 277 6.7 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID S10 VegSwale.txt" *
100
S11         VegSwale 1 330 6.7 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID S11 VegSwale.txt" *
100
S12         VegSwale 1 326 6.7 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID S12 VegSwale.txt" *
100
S13         VegSwale 1 390 6.7 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID S13 VegSwale.txt" *
100
S14         VegSwale 1 1369 6.7 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID S14 VegSwale.txt" *
100
S15         VegSwale 1 598 6.7 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID S15 VegSwale.txt" *
100
S16         VegSwale 1 863 6.7 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID S16 VegSwale.txt" *
100
S2          VegSwale 1 997 6.7 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID S2 VegSwale.txt" *
100
S3          VegSwale 1 376 6.7 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID S3 VegSwale.txt" *
100
S4          VegSwale 1 373 6.7 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID S4 VegSwale.txt" *
100
S5          VegSwale 1 402 6.7 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID S5 VegSwale.txt" *
100
    
```

```

S6          VegSwale 1 683 6.7 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID S6 VegSwale.txt" *
100
S7          VegSwale 1 402 6.7 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID S7 VegSwale.txt" *
100
S8          VegSwale 1 463 6.7 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID S8 VegSwale.txt" *
100
S9          VegSwale 1 465 6.7 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID S9 VegSwale.txt" *
100
SWR-1       VegSwale_RY 1 767 3.6 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID SWR-1 VegSwale_RY.txt" *
100
SWR-2       VegSwale_RY 1 796 3.6 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID SWR-2 VegSwale_RY.txt" *
100
SWR-3       VegSwale_RY 1 1427 3.6 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID SWR-3 VegSwale_RY.txt" *
100
SWR-4       VegSwale_RY 1 748 3.6 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID SWR-4 VegSwale_RY.txt" *
100
SWR-5       VegSwale_RY 1 538 3.6 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID SWR-5 VegSwale_RY.txt" *
100
SWR-6       VegSwale_RY 1 598 3.6 0 100
0 "C:\Users\idzeparoski\OneDrive - Robinson
Consultants\Desktop\PCSWMM\24104 Carroll Industrial\Vegetative Swale Report\WB
POST LID SWR-6 VegSwale_RY.txt" *
100
    
```

```

[AQUIFERS]
;;Name      Por      WP      FC      Ksat      Kslope  Tslope  ETu      ETs      Seep
Ebot  Egw  Umc  ETupat
;-----
BLCK-11AQ  0.484  0.131  0.201  80.594  40.042  0  0.8  2.908  0.004
107.518  111.916  0.266
BLCK-12AQ  0.469  0.061  0.104  115.654  38.349  0  0.8  1.74  0.004
106.759  112.237  0.228
BLCK-2AQ   0.475  0.091  0.145  100.844  39.064  0  0.8  2.233  0.004
107.079  112.101  0.244
BLCK-3AQ   0.512  0.264  0.387  13.425  43.286  0  0.8  5.145  0.004
108.969  111.298  0.338
BLCK-3RAQ  0.497  0.191  0.286  49.955  41.517  0  0.8  3.928  0.004
108.169  111.623  0.299
BLCK-7AQ   0.482  0.121  0.187  85.743  39.793  0  0.8  2.736  0.004
107.405  111.962  0.26
BLCK-9AQ   0.515  0.277  0.405  7.01  43.595  0  0.8  5.359  0.004
109.107  111.238  0.345
HSG_B      0.466  0.047  0.084  122.85  38  0  0.8  1.5  0.004
106.6  112.3  0.22
HSG_D      0.517  0.285  0.417  2.784  43.8  0  0.8  5.5  0.004
109.2  111.2  0.35
S14AQ      0.466  0.049  0.087  121.771  38.051  0  0.8  1.536  0.004
106.62  112.286  0.221
S15AQ      0.473  0.078  0.128  107.121  38.756  0  0.8  2.204  0.004
106.931  112.147  0.237
S1AQ       0.474  0.083  0.134  104.728  38.789  0  0.8  2.104  0.004
107.002  112.144  0.24
S2AQ       0.474  0.087  0.139  102.899  38.96  0  0.8  2.164  0.004
107.022  112.107  0.242
SWR-2AQ    0.482  0.12  0.187  85.949  39.805  0  0.8  2.732  0.004
107.454  112.018  0.26
    
```

```

[GROUNDWATER]
;;Subcatchment  Aquifer  Node  Esurf  A1  B1  A2  B2
A3  Dsw  Egwt  Ebot  Wgr  Umc
;-----
BLCK-10     HSG_D     CARP     115.186  0.05  1  0.05  1
0  0.5  *  *  *  *
BLCK-11AQ  BLCK-11AQ  CARP     115.885  0.05  1  0.05  1
0  0.5  *  *  *  *
BLCK-12     BLCK-12AQ  CARP     115.351  0.05  1  0.05  1
0  0.5  *  *  *  *
BLCK-2      BLCK-2AQ   CARP     115.908  0.05  1  0.05  1
0  0.5  *  *  *  *
BLCK-2R     HSG_B     CARP     114.257  0.05  1  0.05  1
0  0.5  *  *  *  *
BLCK-3      BLCK-3AQ  CARP     115.453  0.05  1  0.05  1
0  0.5  *  *  *  *
BLCK-3R     BLCK-3RAQ  CARP     114.22  0.05  1  0.05  1
0  0.5  *  *  *  *
BLCK-4      HSG_D     CARP     115.386  0.05  1  0.05  1
0  0.5  *  *  *  *
    
```

BLCK-4R	HSG_D	CARP	113.406	0.05	1	0.05	1	J19	113.686	1.2	0	0	0
0	*	*						J2	110.15	1	0	0	0
BLCK-5	HSG_D	CARP	115.163	0.05	1	0.05	1	J20	113.851	1.2	0	0	0
0	*	*						J21	114.352	1.2	0	0	0
BLCK-5R	HSG_D	CARP	112.637	0.05	1	0.05	1	J22	113.597	1.2	0	0	0
0	*	*						J23	113.401	1.2	0	0	0
BLCK-6	HSG_D	CARP	114.937	0.05	1	0.05	1	J24	111.177	1.2	0	0	0
0	*	*						J25	113.437	1	0	0	0
BLCK-6R	HSG_D	CARP	112.369	0.05	1	0.05	1	J26	113.663	1	0	0	0
0	*	*						J27	112.716	0.6	0	0	0
BLCK-7	BLCK-7AQ	CARP	112.677	0.05	1	0.05	1	J28	112.446	0.6	0	0	0
0	*	*						J3	114.915	1	0	0	0
BLCK-7R	HSG_D	CARP	111.5	0.05	1	0.05	1	J30	111.906	0.6	0	0	0
0	*	*						J31	111.413	0.6	0	0	0
BLCK-8	HSG_B	CARP	114.901	0.05	1	0.05	1	J32	111.137	0.6	0	0	0
0	*	*						J33	110.869	0.6	0	0	0
BLCK-9	BLCK-9AQ	CARP	114.907	0.05	1	0.05	1	J35	112.757	0.6	0	0	0
0	*	*						J4	114.408	1	0	0	0
EX-1	HSG_B	CARP	115.552	0.05	1	0.05	1	J5	114.172	1	0	0	0
0	*	*						J6	114.889	1.2	0	0	0
EX-2	HSG_B	CARP	115.45	0.05	1	0.05	1	J7	114.145	1.2	0	0	0
0	*	*						J8	114.385	1.2	0	0	0
EX-3	HSG_B	CARP	116.089	0.05	1	0.05	1	J9	113.85	1.2	0	0	0
0	*	*											
S1	S1AQ	CARP	114.408	0.05	1	0.05	1	[OUTFALLS]					
0	*	*						;;Name	Elevation	Type	Stage Data	Gated	Route To
S10	HSG_D	CARP	113.301	0.05	1	0.05	1	;;-----					
0	*	*						CARP	91	FREE		NO	
S11	HSG_D	CARP	113.401	0.05	1	0.05	1	OF2	109.623	NORMAL		NO	
0	*	*						[STORAGE]					
S12	HSG_D	CARP	113.362	0.05	1	0.05	1	;;Name	Elev.	MaxDepth	InitDepth	Shape	Curve Name/Params
0	*	*						;;SurfDepth	Fevap	Psi	Ksat	IMD	
S13	HSG_D	CARP	113.401	0.05	1	0.05	1	;;-----					
0	*	*						St_BLK-10	115.186	0.5	0	FUNCTIONAL	0 0
S14	S14AQ	CARP	113.597	0.05	1	0.05	1	167.748	0	0			
0	*	*						St_BLK-11	115.885	0.5	0	FUNCTIONAL	0 0
S15	S15AQ	CARP	113.564	0.05	1	0.05	1	138.52	0	0			
0	*	*						St_BLK-12	115.351	0.5	0	FUNCTIONAL	0 0
S16	HSG_B	CARP	113.921	0.05	1	0.05	1	146.26	0	0			
0	*	*						St_BLK-2	115.908	0.5	0	FUNCTIONAL	0 0
S2	S2AQ	CARP	114.385	0.05	1	0.05	1	105.16	0	0			
0	*	*						St_BLK-2R	114.257	0.5	0	FUNCTIONAL	0 0
S3	HSG_D	CARP	114.172	0.05	1	0.05	1	14.72	0	0			
0	*	*						St_BLK-3	115.453	0.5	0	FUNCTIONAL	0 0
S4	HSG_D	CARP	114.145	0.05	1	0.05	1	88.236	0	0			
0	*	*						St_BLK-3R	114.22	0.5	0	FUNCTIONAL	0 0
S5	HSG_D	CARP	113.953	0.05	1	0.05	1	46.34	0	0			
0	*	*						St_BLK-4	115.386	0.5	0	FUNCTIONAL	0 0
S6	HSG_D	CARP	113.85	0.05	1	0.05	1	66.892	0	0			
0	*	*						St_BLK-4R	113.406	0.5	0	FUNCTIONAL	0 0
S7	HSG_D	CARP	113.886	0.05	1	0.05	1	315.406	0	0			
0	*	*						St_BLK-5	115.163	0.5	0	FUNCTIONAL	0 0
S8	HSG_D	CARP	113.686	0.05	1	0.05	1	69.65	0	0			
0	*	*						St_BLK-5R	112.637	0.5	0	FUNCTIONAL	0 0
S9	HSG_D	CARP	113.663	0.05	1	0.05	1	121.24	0	0			
0	*	*						St_BLK-6	114.937	0.5	0	FUNCTIONAL	0 0
SWM_Block	HSG_D	CARP	111.5	0.05	1	0.05	1	68.46	0	0			
0	*	*						St_BLK-6R	112.369	0.5	0	FUNCTIONAL	0 0
SWR-1	HSG_B	CARP	112.757	0.05	1	0.05	1	112.56	0	0			
0	*	*						St_BLK-7	112.677	0.5	0	FUNCTIONAL	0 0
SWR-2	SWR-2AQ	CARP	112.66	0.05	1	0.05	1	267.32	0	0			
0	*	*						St_BLK-8	114.901	0.5	0	FUNCTIONAL	0 0
SWR-3	HSG_D	CARP	111.906	0.05	1	0.05	1	128	0	0			
0	*	*						St_BLK-9	114.907	0.5	0	FUNCTIONAL	0 0
SWR-4	HSG_D	CARP	111.413	0.05	1	0.05	1	160.174	0	0			
0	*	*						SWM_Facility	110.2	1.1	0	TABULAR	Pond
SWR-5	HSG_D	CARP	111.413	0.05	1	0.05	1	0	0				
0	*	*						[CONDUITS]					
SWR-6	HSG_D	CARP	111.3	0.05	1	0.05	1	;;Name	From Node	To Node	Length	Roughness	InOffset
0	*	*						OutOffset	InitFlow	MaxFlow			
								;;-----					
								C3	J33	SWM_Facility	5	0.035	110.869
								Existing					
								0.00	0				
								Existing					
								0.00	25.4				
								Existing					
								0.00	25.4				
								Existing					
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```

;-----
;:1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-10      Rating 0      0
BLCK-10      Rating 0.005  0.167
BLCK-10      Rating 0.35   0.167
BLCK-10      Rating 0.6    0.169

;:1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-11      Rating 0      0
BLCK-11      Rating 0.005  0.193
BLCK-11      Rating 0.35   0.193
BLCK-11      Rating 0.6    0.195

;:1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-12      Rating 0      0
BLCK-12      Rating 0.005  0.203
BLCK-12      Rating 0.35   0.203
BLCK-12      Rating 0.6    0.205

;:1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-2       Rating 0      0
BLCK-2       Rating 0.01   0.146
BLCK-2       Rating 0.35   0.146
BLCK-2       Rating 0.6    0.148

;:1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-2R      Rating 0      0
BLCK-2R      Rating 0.01   0.02
BLCK-2R      Rating 0.35   0.02
BLCK-2R      Rating 0.6    0.02

;:1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-3       Rating 0      0
BLCK-3       Rating 0.01   0.102
BLCK-3       Rating 0.35   0.102
BLCK-3       Rating 0.6    0.102

;:1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-3R      Rating 0      0
BLCK-3R      Rating 0.01   0.064
BLCK-3R      Rating 0.35   0.064
BLCK-3R      Rating 0.6    0.066

;:1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-4       Rating 0      0
BLCK-4       Rating 0.005  0.066
BLCK-4       Rating 0.35   0.066
BLCK-4       Rating 0.6    0.068

;:1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-4R      Rating 0      0
BLCK-4R      Rating 0.01   0.313
BLCK-4R      Rating 0.35   0.313
BLCK-4R      Rating 0.6    0.315

;:1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-5       Rating 0      0
BLCK-5       Rating 0.005  0.069
BLCK-5       Rating 0.35   0.069
BLCK-5       Rating 0.6    0.071

;:1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-5R      Rating 0      0
BLCK-5R      Rating 0.01   0.12
BLCK-5R      Rating 0.35   0.12
BLCK-5R      Rating 0.6    0.122

;:1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-6       Rating 0      0
BLCK-6       Rating 0.005  0.068
BLCK-6       Rating 0.35   0.068
BLCK-6       Rating 0.6    0.07

;:1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-6R      Rating 0      0
BLCK-6R      Rating 0.01   0.112
BLCK-6R      Rating 0.35   0.112
BLCK-6R      Rating 0.6    0.114

;:1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-7       Rating 0      0
BLCK-7       Rating 0.005  0.372
BLCK-7       Rating 0.35   0.372
BLCK-7       Rating 0.6    0.374

;:1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-8       Rating 0      0
BLCK-8       Rating 0.005  0.178
BLCK-8       Rating 0.35   0.178
BLCK-8       Rating 0.6    0.18

;:1:5-year release rate from the site calculated using the rational formula and C-
Factor of 0.48 (Based on the assigned imperviousness of 40%)
BLCK-9       Rating 0      0
BLCK-9       Rating 0.005  0.159
BLCK-9       Rating 0.35   0.159
BLCK-9       Rating 0.6    0.161

;Pond curve developed based on the proposed grading plan for the SWM Facility
Pond         Storage 0      535.87
Pond         Storage 0.1    2195
Pond         Storage 0.2    4260.33
Pond         Storage 0.3    6345.89
Pond         Storage 0.4    8451.68
Pond         Storage 0.5    10555.43
Pond         Storage 0.6    11915.67
Pond         Storage 0.7    12280.08
Pond         Storage 0.8    12464.42
Pond         Storage 0.9    12656.64
Pond         Storage 1      12856.75
Pond         Storage 1.1    13064.75

[TIMESERIES]
;:Name      Date      Time      Value
;-----
;:Rainfall (mm/hr)
1960        04/01/1960 00:00:00  0
1960        04/01/1960 01:00:00  0
1960        04/01/1960 02:00:00  0
1960        04/01/1960 03:00:00  0
1960        04/01/1960 04:00:00  0
1960        04/01/1960 05:00:00  0
1960        04/01/1960 06:00:00  0
1960        04/01/1960 07:00:00  0
1960        04/01/1960 08:00:00  0
1960        04/01/1960 09:00:00  0
1960        04/01/1960 10:00:00  0
.....
Too many data points (5143 in total).

;:Rainfall (mm/hr)
1961        04/01/1961 06:00:00  0
1961        04/01/1961 07:00:00  0
1961        04/01/1961 08:00:00  0
1961        04/01/1961 09:00:00  0
1961        04/01/1961 10:00:00  0
1961        04/01/1961 11:00:00  0
1961        04/01/1961 12:00:00  0
1961        04/01/1961 13:00:00  0
1961        04/01/1961 14:00:00  0
1961        04/01/1961 15:00:00  0
1961        04/01/1961 16:00:00  0
.....
Too many data points (5860 in total).

;:Rainfall (mm/hr)
1962        01/01/1962 00:00:00  0
1962        01/01/1962 01:00:00  0
1962        01/01/1962 02:00:00  0
1962        01/01/1962 03:00:00  0
1962        01/01/1962 04:00:00  0
1962        01/01/1962 05:00:00  0
1962        01/01/1962 06:00:00  0
1962        01/01/1962 07:00:00  0
1962        01/01/1962 08:00:00  0
1962        01/01/1962 09:00:00  0
1962        01/01/1962 10:00:00  0
.....

```

Too many data points (7965 in total).

```
;Rainfall (mm/hr)
1963      01/01/1963 00:00:00  0
1963      01/01/1963 01:00:00  0
1963      01/01/1963 02:00:00  0
1963      01/01/1963 03:00:00  0
1963      01/01/1963 04:00:00  0
1963      01/01/1963 05:00:00  0
1963      03/01/1963 06:00:00  0
1963      03/01/1963 07:00:00  0
1963      03/01/1963 08:00:00  0
1963      03/01/1963 09:00:00  0
1963      03/01/1963 10:00:00  0
.....
```

Too many data points (7327 in total).

```
;Rainfall (mm/hr)
OTTRAIN_1960-2010 04/01/1960 06:00:00  0
OTTRAIN_1960-2010 04/01/1960 07:00:00  0
OTTRAIN_1960-2010 04/01/1960 08:00:00  0
OTTRAIN_1960-2010 04/01/1960 09:00:00  0
OTTRAIN_1960-2010 04/01/1960 10:00:00  0
OTTRAIN_1960-2010 04/01/1960 11:00:00  0
OTTRAIN_1960-2010 04/01/1960 12:00:00  0
OTTRAIN_1960-2010 04/01/1960 13:00:00  0
OTTRAIN_1960-2010 04/01/1960 14:00:00  0
OTTRAIN_1960-2010 04/01/1960 15:00:00  0
OTTRAIN_1960-2010 04/01/1960 16:00:00  0
.....
```

Too many data points (255816 in total).

```
[REPORT]
;;Reporting Options
INPUT      YES
CONTROLS   NO
SUBCATCHMENTS ALL
NODES ALL
LINKS ALL
```

```
[TAGS]
Subcatch  BLCK-10      Development
Subcatch  BLCK-11      Development
Subcatch  BLCK-12      Development
Subcatch  BLCK-2       Development
Subcatch  BLCK-2R      Development
Subcatch  BLCK-3       Development
Subcatch  BLCK-3R      Development
Subcatch  BLCK-4       Development
Subcatch  BLCK-4R      Development
Subcatch  BLCK-5       Development
Subcatch  BLCK-5R      Development
Subcatch  BLCK-6       Development
Subcatch  BLCK-6R      Development
Subcatch  BLCK-7       Development
Subcatch  BLCK-7R      Development
Subcatch  BLCK-8       Development
Subcatch  BLCK-9       Development
Subcatch  EX-1         Existing
Subcatch  EX-2         Existing
Subcatch  EX-3         Existing
Subcatch  S1           ROW
Subcatch  S10          ROW
Subcatch  S11          ROW
Subcatch  S12          ROW
Subcatch  S13          ROW
Subcatch  S14          ROW
Subcatch  S15          ROW
Subcatch  S16          ROW
Subcatch  S2           ROW
Subcatch  S3           ROW
Subcatch  S4           ROW
Subcatch  S5           ROW
Subcatch  S6           ROW
Subcatch  S7           ROW
Subcatch  S8           ROW
Subcatch  S9           ROW
Subcatch  SWM_Block    SWM_Block
Subcatch  SWR-1        Swale
Subcatch  SWR-2        Swale
Subcatch  SWR-3        Swale
Subcatch  SWR-4        Swale
Subcatch  SWR-5        Swale
Subcatch  SWR-6        Swale
Node      St_BLKCK-10   On-Site_Storage
Node      St_BLKCK-11   On-Site_Storage
Node      St_BLKCK-12   On-Site_Storage
Node      St_BLKCK-2    On-Site_Storage
Node      St_BLKCK-2R   On-Site_Storage
Node      St_BLKCK-3    On-Site_Storage
Node      St_BLKCK-3R   On-Site_Storage
Node      St_BLKCK-4    On-Site_Storage
Node      St_BLKCK-4R   On-Site_Storage
Node      St_BLKCK-5    On-Site_Storage
Node      St_BLKCK-5R   On-Site_Storage
Node      St_BLKCK-6    On-Site_Storage
```

```
Node      St_BLKCK-6R   On-Site_Storage
Node      St_BLKCK-7   On-Site_Storage
Node      St_BLKCK-8   On-Site_Storage
Node      St_BLKCK-9   On-Site_Storage
Node      SWM_Facility  SWM_Facility
Link      C3           Swale
Link      CULV-1       Culvert
Link      Ditch-2      Ditch
Link      Ditch-3      Ditch
Link      Swale-1      Swale
Link      Swale-10     Swale
Link      Swale-10A    Swale
Link      Swale-11     Swale
Link      Swale-11A    Swale
Link      Swale-12     Swale
Link      Swale-13     Swale
Link      Swale-14     Swale
Link      Swale-15     Swale
Link      Swale-15A    Swale
Link      Swale-16     Swale
Link      Swale-17     Swale
Link      Swale-2      Swale
Link      Swale-3      Swale
Link      Swale-4      Swale
Link      Swale-5      Swale
Link      Swale-5A     Swale
Link      Swale-6      Swale
Link      Swale-6A     Swale
Link      Swale-7      Swale
Link      Swale-8      Swale
Link      Swale-9      Swale
Link      Swale-RY1_1  Swale
Link      Swale-RY1_2  Swale
Link      Swale-RY2    Swale
Link      Swale-RY3    Swale
Link      Swale-RY4    Swale
Link      Swale-RY5    Swale
Link      Swale-RY6    Swale
```

```
[MAP]
DIMENSIONS 343500.6446 5019613.1261 344846.1074 5021427.1119
UNITS      Meters
```

```
[COORDINATES]
;;Node      X-Coord      Y-Coord
;;-----
;;Storage Node X-Coord      Y-Coord
;;-----
[SYMBOLS]
;;Gage      X-Coord      Y-Coord
;;-----
```

WB POST LID OUTPUT (51 years of rainfall data: 1960-2010)

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.2 (Build 5.2.4)

WARNING 02: maximum depth increased for Node J11
 WARNING 02: maximum depth increased for Node J12
 WARNING 02: maximum depth increased for Node J13
 WARNING 02: maximum depth increased for Node J24
 WARNING 02: maximum depth increased for Node J25
 WARNING 02: maximum depth increased for Node J26
 WARNING 02: maximum depth increased for Node J3
 WARNING 02: maximum depth increased for Node J33
 WARNING 02: maximum depth increased for Node J4
 WARNING 02: maximum depth increased for Node J5

 Element Count

 Number of rain gages 1
 Number of subcatchments ... 43
 Number of nodes 52
 Number of links 52
 Number of pollutants 0
 Number of land uses 0

 Rainage Summary

Name	Data Source	Data Type	Recording Interval
Rainfall	OTTRAIN_1960-2010	INTENSITY	60 min.

 Subcatchment Summary

Name	Area	Width	%Imperv	%Slope	Rain Gage
Outlet					
BLCK-10	1.20	269.60	40.00	2.0000	Rainfall
St_BLCK-10					
BLCK-11	1.39	311.67	40.00	2.0000	Rainfall
St_BLCK-11					
BLCK-12	1.46	329.09	40.00	2.0000	Rainfall
St_BLCK-12					
BLCK-2	1.05	236.61	40.00	2.0000	Rainfall
St_BLCK-2					
BLCK-2R	0.15	33.12	40.00	2.0000	Rainfall
St_BLCK-2R					
BLCK-3	0.74	165.44	40.00	2.0000	Rainfall
St_BLCK-3					
BLCK-3R	0.46	104.27	40.00	2.0000	Rainfall
St_BLCK-3R					
BLCK-4	0.48	107.51	40.00	2.0000	Rainfall
St_BLCK-4					
BLCK-4R	2.25	506.91	40.00	2.0000	Rainfall
St_BLCK-4R					
BLCK-5	0.50	111.94	40.00	2.0000	Rainfall
St_BLCK-5					
BLCK-5R	0.87	194.85	40.00	2.0000	Rainfall
St_BLCK-5R					
BLCK-6	0.49	110.03	40.00	2.0000	Rainfall
St_BLCK-6					
BLCK-6R	0.80	180.90	40.00	2.0000	Rainfall
St_BLCK-6R					
BLCK-7	2.67	601.48	40.00	2.0000	Rainfall
St_BLCK-7					
BLCK-7R	0.29	64.17	0.00	2.0000	Rainfall
St_BLCK-7R					J2
BLCK-8	1.28	288.00	40.00	2.0000	Rainfall
St_BLCK-8					
BLCK-9	1.14	257.43	40.00	2.0000	Rainfall
St_BLCK-9					
EX-1	6.99	478.16	13.98	5.3800	Rainfall
J21					
EX-2	1.86	159.36	0.00	5.1230	Rainfall
EX-3	2.29	496.25	24.34	5.4260	Rainfall
S1	0.22	467.81	44.54	3.0000	Rainfall
S10	0.06	114.50	44.54	3.0000	Rainfall
J18					
S11	0.06	138.66	44.54	3.0000	Rainfall
J25					
S12	0.07	134.16	44.54	3.0000	Rainfall
J16					
S13	0.08	163.32	44.54	3.0000	Rainfall
J23					
S14	0.28	615.65	44.54	3.0000	Rainfall
J22					
S15	0.12	254.02	44.54	3.0000	Rainfall
J15					
S16	0.18	366.50	44.54	3.0000	Rainfall
J14					
S2	0.21	435.79	44.54	3.0000	Rainfall
J8					

S3	0.08	161.65	44.54	3.0000	Rainfall	J5
S4	0.07	161.51	44.54	3.0000	Rainfall	J7
S5	0.08	166.67	44.54	3.0000	Rainfall	
J11						
S6	0.14	283.83	44.54	3.0000	Rainfall	J9
S7	0.08	169.35	44.54	3.0000	Rainfall	
J12						
S8	0.09	200.82	44.54	3.0000	Rainfall	
J19						
S9	0.09	200.65	44.54	3.0000	Rainfall	
J26						
SWM_Block	1.78	966.87	28.50	2.0000	Rainfall	
SWM_Facility						
SWR-1	0.10	191.80	0.00	2.0000	Rainfall	
J35						
SWR-2	0.10	199.00	0.00	2.0000	Rainfall	
J28						
SWR-3	0.18	356.80	0.00	2.0000	Rainfall	
J30						
SWR-4	0.09	187.00	0.00	2.0000	Rainfall	
J31						
SWR-5	0.07	134.60	0.00	2.0000	Rainfall	
J32						
SWR-6	0.07	149.40	0.00	2.0000	Rainfall	
J33						

 LID Control Summary

Imperv	% Perv	LID Control	No. of Units	Unit Area	Unit Width	% Area Covered
BLCK-10		Infiltration_D	1	210.00	14.00	1.75
100.00	100.00					
BLCK-11		Infiltration_B	1	240.00	15.00	1.73
100.00	100.00					
BLCK-12		Infiltration_B	1	255.00	15.00	1.74
100.00	100.00					
BLCK-2		Infiltration_B	1	180.00	12.00	1.71
100.00	100.00					
BLCK-2R		Infiltration_B	1	25.00	5.00	1.70
100.00	100.00					
BLCK-3		Infiltration_D	1	132.00	11.00	1.80
100.00	100.00					
BLCK-3R		Infiltration_B	1	81.00	9.00	1.75
100.00	100.00					
BLCK-4		Infiltration_D	1	90.00	9.00	1.88
100.00	100.00					
BLCK-4R		Infiltration_D	1	400.00	20.00	1.78
100.00	100.00					
BLCK-5		Infiltration_D	1	90.00	9.00	1.81
100.00	100.00					
BLCK-5R		Infiltration_D	1	180.00	12.00	2.08
100.00	100.00					
BLCK-6		Infiltration_D	1	90.00	9.00	1.84
100.00	100.00					
BLCK-6R		Infiltration_D	1	135.00	9.00	1.68
100.00	100.00					
BLCK-7		Infiltration_B	1	460.00	20.00	1.72
100.00	100.00					
BLCK-8		Infiltration_B	1	225.00	15.00	1.76
100.00	100.00					
BLCK-9		Infiltration_D	1	195.00	13.00	1.70
100.00	100.00					
S1		VegSwale	1	1073.00	6.70	48.57
100.00	100.00					
S10		VegSwale	1	277.00	6.70	48.60
100.00	100.00					
S11		VegSwale	1	330.00	6.70	51.40
100.00	100.00					
S12		VegSwale	1	326.00	6.70	48.66
100.00	100.00					
S13		VegSwale	1	390.00	6.70	51.52
100.00	100.00					
S14		VegSwale	1	1369.00	6.70	48.07
100.00	100.00					
S15		VegSwale	1	598.00	6.70	50.51
100.00	100.00					

S16	VegSwale	1	863.00	6.70	47.81					
100.00	100.00									
S2	VegSwale	1	997.00	6.70	47.39					
100.00	100.00					C3	J33	SWM_Facility	CONDUIT	5.0 2.3807
S3	VegSwale	1	376.00	6.70	50.00	0.0350				
100.00	100.00					CULV-1	J17	J24	CONDUIT	11.6 0.1991
S4	VegSwale	1	373.00	6.70	49.93	0.0240				
100.00	100.00					Ditch-2	J1	J2	CONDUIT	211.8 2.0311
S5	VegSwale	1	402.00	6.70	51.67	0.0350				
100.00	100.00					Ditch-3	J2	OF2	CONDUIT	95.2 0.5536
S6	VegSwale	1	683.00	6.70	48.75	0.0350				
100.00	100.00					Swale-1	J3	J4	CONDUIT	169.0 0.3000
S7	VegSwale	1	402.00	6.70	51.60	0.0350				
100.00	100.00					Swale-10	J18	J17	CONDUIT	35.3 0.2999
S8	VegSwale	1	463.00	6.70	50.05	0.0350				
100.00	100.00					Swale-10A	J16	J17	CONDUIT	20.4 0.2987
S9	VegSwale	1	465.00	6.70	50.11	0.0350				
100.00	100.00					Swale-11	J25	J24	CONDUIT	53.1 0.2996
SWR-1	VegSwale_RY	1	767.00	3.60	79.98	0.0350				
100.00	100.00					Swale-11A	J23	J24	CONDUIT	41.0 0.2998
SWR-2	VegSwale_RY	1	796.00	3.60	80.00	0.0350				
100.00	100.00					Swale-12	J15	J16	CONDUIT	67.3 0.3002
SWR-3	VegSwale_RY	1	1427.00	3.60	79.99	0.0350				
100.00	100.00					Swale-13	J22	J23	CONDUIT	65.5 0.2993
SWR-4	VegSwale_RY	1	748.00	3.60	80.00	0.0350				
100.00	100.00					Swale-14	J21	J22	CONDUIT	251.6 0.3001
SWR-5	VegSwale_RY	1	538.00	3.60	79.94	0.0350				
100.00	100.00					Swale-15	J20	J15	CONDUIT	95.5 0.3004
SWR-6	VegSwale_RY	1	598.00	3.60	80.05	0.0350				
100.00	100.00					Swale-15A	J14	J20	CONDUIT	23.4 0.2990

Node Summary

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow					
J1	JUNCTION	114.45	1.00	0.0		Swale-16	J13	J14	CONDUIT	138.0 0.3000
J10	JUNCTION	113.00	0.60	0.0		0.0350				
J11	JUNCTION	113.95	1.20	0.0		Swale-17	J24	SWM_Facility	CONDUIT	5.0 5.5485
J12	JUNCTION	113.89	1.20	0.0		0.0350				
J13	JUNCTION	114.33	1.20	0.0		Swale-2	J6	J8	CONDUIT	168.2 0.2997
J14	JUNCTION	113.92	1.20	0.0		0.0350				
J15	JUNCTION	113.56	1.20	0.0		Swale-3	J4	J5	CONDUIT	78.6 0.3003
J16	JUNCTION	113.36	1.20	0.0		0.0350				
J17	JUNCTION	113.30	1.20	0.0		Swale-4	J8	J7	CONDUIT	79.9 0.3004
J18	JUNCTION	113.41	1.20	0.0		0.0350				
J19	JUNCTION	113.69	1.20	0.0		Swale-5	J5	J11	CONDUIT	72.9 0.3005
J2	JUNCTION	110.15	1.00	0.0		0.0350				
J20	JUNCTION	113.85	1.20	0.0		Swale-5A	J11	J12	CONDUIT	22.4 0.2993
J21	JUNCTION	114.35	1.20	0.0		0.0350				
J22	JUNCTION	113.60	1.20	0.0		Swale-6	J7	J9	CONDUIT	98.3 0.3001
J23	JUNCTION	113.40	1.20	0.0		0.0350				
J24	JUNCTION	111.18	3.30	0.0		Swale-6A	J9	J19	CONDUIT	54.7 0.2996
J25	JUNCTION	113.44	1.20	0.0		0.0350				
J26	JUNCTION	113.66	1.20	0.0		Swale-7	J12	J26	CONDUIT	74.4 0.2996
J27	JUNCTION	112.72	0.60	0.0		0.0350				
J28	JUNCTION	112.45	0.60	0.0		Swale-8	J19	J18	CONDUIT	92.8 0.3005
J3	JUNCTION	114.92	1.20	0.0		0.0350				
J30	JUNCTION	111.91	0.60	0.0		Swale-9	J26	J25	CONDUIT	75.4 0.2996
J31	JUNCTION	111.41	0.60	0.0		0.0350				
J32	JUNCTION	111.14	0.60	0.0		Swale-RY1_1	J10	J35	CONDUIT	81.1 0.2997
J33	JUNCTION	110.87	1.20	0.0		0.0350				
J35	JUNCTION	112.76	0.60	0.0		Swale-RY1_2	J35	J27	CONDUIT	13.7 0.2993
J4	JUNCTION	114.41	1.20	0.0		0.0350				
J5	JUNCTION	114.17	1.20	0.0		Swale-RY2	J27	J28	CONDUIT	89.8 0.3005
J6	JUNCTION	114.89	1.20	0.0		0.0350				
J7	JUNCTION	114.14	1.20	0.0		Swale-RY3	J28	J30	CONDUIT	179.9 0.3001
J8	JUNCTION	114.39	1.20	0.0		0.0350				
J9	JUNCTION	113.85	1.20	0.0		Swale-RY4	J30	J31	CONDUIT	164.4 0.2999
CARP	OUTFALL	91.00	0.00	0.0		0.0350				
OF2	OUTFALL	109.62	0.83	0.0		Swale-RY5	J31	J32	CONDUIT	92.1 0.2996
St_BLK-10	STORAGE	115.19	0.50	0.0		0.0350				
St_BLK-11	STORAGE	115.89	0.50	0.0		Swale-RY6	J32	J33	CONDUIT	89.3 0.3002
St_BLK-12	STORAGE	115.35	0.50	0.0		OR1	SWM_Facility	J2	ORIFICE	
St_BLK-2	STORAGE	115.91	0.50	0.0		OR2	SWM_Facility	J2	ORIFICE	
St_BLK-2R	STORAGE	114.26	0.50	0.0		W1	SWM_Facility	J2	WEIR	
St_BLK-3	STORAGE	115.45	0.50	0.0		O_BLK-10	St_BLK-10	J19	OUTLET	
St_BLK-3R	STORAGE	114.22	0.50	0.0		O_BLK-11	St_BLK-11	J8	OUTLET	
St_BLK-4	STORAGE	115.39	0.50	0.0		O_BLK-12	St_BLK-12	J20	OUTLET	
St_BLK-4R	STORAGE	113.41	0.50	0.0		O_BLK-2	St_BLK-2	J4	OUTLET	
St_BLK-5	STORAGE	115.16	0.50	0.0		O_BLK-2R	St_BLK-2R	J35	OUTLET	
St_BLK-5R	STORAGE	112.64	0.50	0.0		O_BLK-3	St_BLK-3	J11	OUTLET	
St_BLK-6	STORAGE	114.94	0.50	0.0		O_BLK-4	St_BLK-4	J12	OUTLET	
St_BLK-6R	STORAGE	112.37	0.50	0.0		O_BLK-5	St_BLK-5	J26	OUTLET	
St_BLK-7	STORAGE	112.68	0.50	0.0		O_BLK-5R	St_BLK-5R	J32	OUTLET	
St_BLK-8	STORAGE	114.90	0.50	0.0		O_BLK-6	St_BLK-6	J25	OUTLET	
St_BLK-9	STORAGE	114.91	0.50	0.0		O_BLK-6R	St_BLK-6R	J33	OUTLET	
SWM_Facility	STORAGE	110.20	1.10	0.0		O_BLK-7	St_BLK-7	J24	OUTLET	
						O_BLK-8	St_BLK-8	J23	OUTLET	
						O_BLK-9	St_BLK-9	J18	OUTLET	
						O_St_BLK-3R	St_BLK-3R	J27	OUTLET	
						O_St_BLK-4R	St_BLK-4R	J30	OUTLET	

Cross Section Summary

Name	From Node	To Node	Type	Length	%Slope	Full	Full	Hyd.	Max.	No. of
Link Summary						Full				
Roughness										

Conduit Flow	Shape	Depth	Area	Rad.	Width	Barrels	0.8915	0.9209	0.9495	0.9771	1.0000
---							0.0773	0.1251	0.1356	0.1461	0.1566
C3	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1	0.1671	0.1776	0.1881	0.1986	0.2091
13.08							0.2196	0.2301	0.2405	0.2510	0.2615
CULV-1	CIRCULAR	0.75	0.44	0.19	0.75	1	0.2720	0.2825	0.2930	0.3029	0.3119
0.27							0.3209	0.3299	0.3389	0.3478	0.3568
Ditch-2	TRAPEZOIDAL	1.00	4.00	0.55	7.00	1	0.3658	0.3762	0.3868	0.3975	0.4081
10.88							0.4187	0.4293	0.4400	0.4506	0.4612
Ditch-3	ExisitngDitch	0.83	2.95	0.41	9.00	1	0.4718	0.4824	0.4931	0.5037	0.5170
3.45							0.5477	0.5785	0.6093	0.6686	0.7670
Swale-1	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1	0.8204	0.8438	0.8673	0.8970	1.0000
4.64											
Swale-10	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
4.64											
Swale-10A	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
4.63											
Swale-11	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
4.64											
Swale-11A	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
4.64											
Swale-12	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
4.65											
Swale-13	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
4.64											
Swale-14	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
4.64											
Swale-15	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
4.65											
Swale-15A	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
4.64											
Swale-16	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
4.64											
Swale-17	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
19.97											
Swale-2	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
4.64											
Swale-3	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
4.65											
Swale-4	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
4.65											
Swale-5	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
4.65											
Swale-5A	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
4.64											
Swale-6	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
4.64											
Swale-6A	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
4.64											
Swale-7	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
4.64											
Swale-8	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
4.65											
Swale-9	TRAPEZOIDAL	1.20	4.32	0.57	7.20	1					
4.64											
Swale-RV1_1	TRAPEZOIDAL	0.60	1.08	0.28	3.60	1					
0.73											
Swale-RV1_2	TRAPEZOIDAL	0.60	1.08	0.28	3.60	1					
0.73											
Swale-RV2	TRAPEZOIDAL	0.60	1.08	0.28	3.60	1					
0.73											
Swale-RV3	TRAPEZOIDAL	0.60	1.08	0.28	3.60	1					
0.73											
Swale-RV4	TRAPEZOIDAL	0.60	1.08	0.28	3.60	1					
0.73											
Swale-RV5	TRAPEZOIDAL	0.60	1.08	0.28	3.60	1					
0.73											
Swale-RV6	TRAPEZOIDAL	0.60	1.08	0.28	3.60	1					
0.73											

*****							Volume	Depth
Runoff Quantity Continuity							hectare-m	mm
*****							-----	-----
Initial Snow Cover							0.000	0.000
Total Precipitation							833.123	25515.677
Evaporation Loss							156.284	4786.443
Infiltration Loss							585.738	17939.133
Surface Runoff							91.297	2796.120
Snow Removed							0.000	0.000
Final Snow Cover							0.000	0.000
Final Storage							0.000	0.000
Continuity Error (%)							-0.024	

*****							Volume	Depth
Groundwater Continuity							hectare-m	mm
*****							-----	-----
Initial Storage							88.260	2703.095
Infiltration							585.738	17939.133
Upper Zone ET							449.220	13758.064
Lower Zone ET							9.634	295.056
Deep Percolation							0.000	0.004
Groundwater Flow							261.394	8005.589
Final Storage							56.830	1740.494
Continuity Error (%)							-15.294	

*****							Volume	Volume
Flow Routing Continuity							hectare-m	10 ⁶ itr
*****							-----	-----
Dry Weather Inflow							0.000	0.000
Wet Weather Inflow							91.298	912.992
Groundwater Inflow							261.389	2613.917
RDII Inflow							0.000	0.000
External Inflow							0.000	0.000
External Outflow							352.285	3522.889
Flooding Loss							0.000	0.000
Evaporation Loss							0.402	4.019
Exfiltration Loss							0.000	0.000
Initial Stored Volume							0.000	0.000
Final Stored Volume							0.000	0.000
Continuity Error (%)							0.000	

*****							Time-Step Critical Elements	
*****							None	

*****							Highest Flow Instability Indexes	
*****							All links are stable.	

Transect Summary	Area:	0.0020	0.0075	0.0142	0.0213	0.0290
		0.0373	0.0460	0.0553	0.0652	0.0756
		0.0865	0.0979	0.1099	0.1224	0.1354
		0.1490	0.1631	0.1778	0.1930	0.2086
		0.2247	0.2413	0.2583	0.2758	0.2937
		0.3121	0.3310	0.3504	0.3703	0.3908
		0.4119	0.4335	0.4556	0.4782	0.5014
		0.5252	0.5495	0.5743	0.5997	0.6256
		0.6527	0.6813	0.7116	0.7437	0.7802
		0.8211	0.8634	0.9070	0.9517	1.0000

Hrad:	0.0202	0.0478	0.0826	0.1151	0.1456
	0.1747	0.2026	0.2294	0.2554	0.2807
	0.3054	0.3296	0.3533	0.3767	0.3997
	0.4223	0.4448	0.4669	0.4898	0.5136
	0.5372	0.5605	0.5835	0.6063	0.6289
	0.6513	0.6714	0.6910	0.7106	0.7302
	0.7497	0.7693	0.7888	0.8083	0.8278
	0.8472	0.8667	0.8861	0.9056	0.9250
	0.9431	0.9594	0.9741	0.9424	0.8899

```

*****
Most Frequent Nonconverging Nodes
*****
Convergence obtained at all time steps.

*****
Routing Time Step Summary
*****
Minimum Time Step      : 0.89 sec
Average Time Step      : 1.00 sec
Maximum Time Step      : 1.00 sec
% of Time in Steady State : 0.00
Average Iterations per Step : 2.00
% of Steps Not Converging : 0.00
Time Step Frequencies :
1.000 - 0.871 sec      : 100.00 %
0.871 - 0.758 sec      : 0.00 %
0.758 - 0.660 sec      : 0.00 %
0.660 - 0.574 sec      : 0.00 %
0.574 - 0.500 sec      : 0.00 %

*****
Subcatchment Runoff Summary
*****
S3      25515.68  0.00  3035.64  6090.26  4314.12
4116.40 16438.51  12.36  0.01  0.644
S4      25515.68  0.00  3038.96  6095.65  4319.91
4123.01 16429.70  12.27  0.01  0.644
S5      25515.68  0.00  2944.88  5928.07  4170.02
3968.11 16693.07  12.99  0.01  0.654
S6      25515.68  0.00  3148.72  6266.75  4421.65
4224.23 16152.56  22.63  0.01  0.633
S7      25515.68  0.00  2949.06  5930.59  4175.78
3977.46 16686.36  13.00  0.01  0.654
S8      25515.68  0.00  3046.23  6099.82  4309.48
4113.16 16420.34  15.19  0.01  0.644
S9      25515.68  0.00  3043.46  6095.30  4304.84
4107.94 16427.68  15.24  0.01  0.644
SWM_Block 25515.68  0.00  5298.81  14981.14  5508.99
5238.95 5238.95  93.42  0.15  0.205
SWR-1    25515.68  0.00  1047.90  6670.68  0.00
126.77 17868.17  17.14  0.01  0.700
SWR-2    25515.68  0.00  1125.61  6484.45  0.00
185.28 17977.07  17.89  0.01  0.705
SWR-3    25515.68  0.00  1528.61  5911.82  0.00
464.13 18145.78  32.37  0.01  0.711
SWR-4    25515.68  0.00  1301.87  5740.02  0.00
463.88 18547.07  17.34  0.01  0.727
SWR-5    25515.68  0.00  1212.93  5663.38  0.00
465.24 18713.14  12.59  0.01  0.733
SWR-6    25515.68  0.00  1237.38  5671.21  0.00
462.64 18680.89  13.95  0.01  0.732
    
```

-----										*****										
-----										LID Performance Summary										
-----										*****										
-----										-----										
Perov	Total	Total	Total	Total	Total	Total	Total	Imperv		Initial	Final	Continuity	Total	Evap	Infil	Surface	Drain			
Runoff	Runoff	Runoff	Peak	Runoff	Runoff	Evap	Infil	Runoff		Storage	Storage	Error	Inflow	Loss	Loss	Outflow	Outflow			
Subcatchment	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	
mm	mm	10^6 ltr	CMS	mm	mm	mm	mm	mm	mm	mm	mm	%	mm	mm	mm	mm	mm	mm	mm	
-----										-----										
BLCK-10		25515.68	0.00	5752.31	17926.91	7575.84				BLCK-10		Infiltration_D	410181.93	3038.72	302229.70	104915.28	0.00			
6741.77	1838.77	22.03	0.11	0.072						0.00	0.00	-0.00								
BLCK-11		25515.68	0.00	5477.69	19578.67	7577.38				BLCK-11		Infiltration_B	332711.32	416.92	305655.40	26640.42	0.00			
5322.47	461.57	6.39	0.10	0.018						0.00	0.00	-0.00								
BLCK-12		25515.68	0.00	5413.94	19719.60	7576.54				BLCK-12		Infiltration_B	307612.99	381.04	285186.79	22046.51	0.00			
4918.28	384.37	5.62	0.10	0.015						0.00	0.00	-0.00								
BLCK-2		25515.68	0.00	5440.87	19649.87	7578.98				BLCK-2		Infiltration_B	322869.66	402.79	297511.19	24957.06	0.00			
5089.74	427.18	4.49	0.08	0.017						0.00	0.00	-0.00								
BLCK-2R		25515.68	0.00	5407.58	19718.03	7580.01				BLCK-2R		Infiltration_B	312663.37	385.68	289179.88	23099.16	0.00			
4876.83	392.31	0.58	0.01	0.015						0.00	0.00	-0.00								
BLCK-3		25515.68	0.00	5708.78	18131.88	7572.56				BLCK-3		Infiltration_B	322869.66	402.79	297511.19	24957.06	0.00			
6512.32	1677.32	12.33	0.06	0.066						0.00	0.00	-0.00								
BLCK-3R		25515.68	0.00	5545.81	19434.46	7576.20				BLCK-3R		Infiltration_B	312663.37	385.68	289179.88	23099.16	0.00			
5800.97	537.69	2.49	0.04	0.021						0.00	0.00	-0.00								
BLCK-4		25515.68	0.00	5746.21	18092.68	7565.76				BLCK-4		Infiltration_D	388281.60	2916.26	291932.83	93434.27	0.00			
6721.27	1679.10	8.02	0.04	0.066						0.00	0.00	-0.00								
BLCK-4R		25515.68	0.00	5752.29	17946.93	7574.08				BLCK-4R		Infiltration_B	357388.64	450.16	326179.04	30760.94	0.00			
6753.80	1818.78	40.98	0.20	0.071						0.00	0.00	-0.00								
BLCK-5		25515.68	0.00	5749.73	18001.12	7571.50				BLCK-5		Infiltration_D	382340.54	2918.38	290282.11	89141.83	0.00			
6729.61	1767.14	8.79	0.04	0.069						0.00	0.00	-0.00								
BLCK-5R		25515.68	0.00	5736.74	18299.51	7550.78				BLCK-5R		Infiltration_D	405906.95	3019.57	300450.84	102438.31	0.00			
6732.07	1481.75	12.83	0.08	0.058						0.00	0.00	-0.00								
BLCK-6		25515.68	0.00	5748.58	18037.52	7569.08				BLCK-6		Infiltration_D	397513.95	2985.55	296846.38	97683.80	0.00			
6738.35	1731.88	8.47	0.04	0.068						0.00	0.00	-0.00								
BLCK-6R		25515.68	0.00	5755.63	17824.19	7581.49				BLCK-6R		Infiltration_D	349403.21	2754.08	275362.32	71288.61	0.00			
6748.89	1938.16	15.58	0.07	0.076						0.00	0.00	-0.00								
BLCK-7		25515.68	0.00	5468.19	19595.79	7578.28				BLCK-7		Infiltration_D	391632.82	2957.46	294578.04	94099.09	0.00			
5256.22	453.95	12.14	0.20	0.018						0.00	0.00	-0.00								
BLCK-7R		25515.68	0.00	3396.81	19960.08	0.00				BLCK-7R		Infiltration_D	427449.57	3107.69	308915.24	115428.40	0.00			
2158.85	2158.85	6.16	0.02	0.085						0.00	0.00	-0.00								
BLCK-8		25515.68	0.00	5404.15	19746.50	7575.44				BLCK-8		Infiltration_D	330970.96	415.17	304176.79	26380.42	0.00			
4870.81	367.26	4.70	0.09	0.014						0.00	0.00	-0.00								
BLCK-9		25515.68	0.00	5742.43	17927.73	7579.54				BLCK-9		Infiltration_B	302610.48	371.84	281347.01	20892.96	0.00			
6663.59	1847.83	21.14	0.10	0.072						0.00	0.00	-0.00								
EX-1		25515.68	0.00	3745.02	20598.84	2697.51				EX-1		Infiltration_D	416480.45	3057.99	305008.57	108415.65	0.00			
1172.68	1172.68	81.91	0.32	0.046						0.00	0.00	-0.00								
EX-2		25515.68	0.00	3822.51	18978.59	0.00				EX-2		Infiltration_D	32496.06	440.29	1036.12	31113.93	0.00			
2714.64	2714.64	50.42	0.14	0.106						0.00	0.00	-0.29								
EX-3		25515.68	0.00	4892.20	16978.10	4702.87				EX-3		VegSwale	34236.64	236.33	638.59	33439.83	0.00			
3647.67	3647.67	83.66	0.17	0.143						0.00	0.00	-0.23								
S1		25515.68	0.00	3078.62	7376.16	4437.04				S1		VegSwale	33280.52	254.84	664.32	32442.41	0.00			
3390.65	15113.28	33.39	0.02	0.592						0.00	0.00	-0.24								
S10		25515.68	0.00	3098.64	6211.05	4434.91				S10		VegSwale	34215.48	254.05	663.40	33379.77	0.00			
4238.08	16250.58	9.26	0.01	0.637						0.00	0.00	-0.24								
S11		25515.68	0.00	2947.66	5940.15	4193.24				S11		VegSwale	32863.33	274.47	723.95	31948.76	0.00			
3991.27	16676.00	10.71	0.01	0.654						0.00	0.00	-0.26								
S12		25515.68	0.00	3103.96	6216.61	4429.71				S12		VegSwale	32440.57	495.61	1109.74	30929.27	0.00			
4233.04	16241.49	10.88	0.01	0.637						0.00	0.00	-0.29								
S13		25515.68	0.00	2921.37	6184.19	4183.13				S13		VegSwale	32021.53	333.31	905.33	30872.10	0.00			
3785.45	16459.72	12.46	0.01	0.645						0.00	0.00	-0.28								
S14		25515.68	0.00	3119.99	7580.19	4480.63				S14		VegSwale	32507.52	396.54	1010.19	31194.03	0.00			
3328.72	14867.33	42.34	0.02	0.583						0.00	0.00	-0.29								
S15		25515.68	0.00	2927.55	7047.11	4270.42				S15		VegSwale	32872.19	425.43	1020.25	31521.07	0.00			
3285.90	15592.49	18.46	0.01	0.611						0.00	0.00	-0.29								
S16		25515.68	0.00	3086.07	7566.37	4502.61				S16		VegSwale	33748.49	270.59	685.09	32877.03	0.00			
3342.91	14914.37	26.92	0.01	0.585						0.00	0.00	-0.25								
S2		25515.68	0.00	3134.6																

S4		VegSwale	33772.76	269.63	683.77	32903.46	0.00
0.00	0.00	-0.25					
S5		VegSwale	33195.26	278.55	695.19	32306.49	0.00
0.00	0.00	-0.26					
S6		VegSwale	34180.61	357.01	784.50	33132.86	0.00
0.00	0.00	-0.27					
S7		VegSwale	33223.25	278.57	694.65	32335.03	0.00
0.00	0.00	-0.26					
S8		VegSwale	33733.11	297.58	718.38	32805.23	0.00
0.00	0.00	-0.26					
S9		VegSwale	33713.88	298.16	719.12	32784.72	0.00
0.00	0.00	-0.26					
SWR-1		VegSwale_RY	25674.19	812.37	2609.57	22341.04	0.00
0.00	0.00	-0.35					
SWR-2		VegSwale_RY	25747.28	826.85	2538.30	22471.35	0.00
0.00	0.00	-0.35					
SWR-3		VegSwale_RY	26095.93	1088.35	2410.12	22685.42	0.00
0.00	0.00	-0.34					
SWR-4		VegSwale_RY	26095.52	805.23	2197.84	23183.85	0.00
0.00	0.00	-0.35					
SWR-5		VegSwale_RY	26097.67	692.11	2088.78	23408.83	0.00
0.00	0.00	-0.35					
SWR-6		VegSwale_RY	26093.60	726.33	2123.74	23335.50	0.00
0.00	0.00	-0.35					

Groundwater Summary

S2			7495.88	8535.53	0.00	1261.06	0.22	0.10	107.02
0.09	107.02								
S3			6090.26	6847.91	0.00	334.67	0.07	0.29	109.20
0.29	109.20								
S4			6095.65	6869.03	0.00	334.67	0.07	0.29	109.20
0.29	109.20								
S5			5928.07	6843.92	0.00	334.67	0.08	0.29	109.20
0.29	109.20								
S6			6266.75	7199.72	0.00	334.67	0.14	0.29	109.20
0.29	109.20								
S7			5930.59	6886.75	0.00	334.67	0.08	0.29	109.20
0.29	109.20								
S8			6099.82	7153.26	0.00	334.67	0.09	0.29	109.20
0.29	109.20								
S9			6095.30	7163.49	0.00	334.67	0.09	0.29	109.20
0.29	109.20								
SWM Block			14981.14	15849.74	0.00	2750.53	1.74	0.38	109.20
0.42	109.20								
SWR-1			6670.68	7700.10	0.01	1440.80	0.10	0.05	106.60
0.05	106.60								
SWR-2			6484.45	7181.04	0.01	1046.50	0.10	0.12	107.45
0.12	107.45								
SWR-3			5911.82	8837.25	0.00	334.67	0.17	0.29	109.20
0.28	109.20								
SWR-4			5740.02	9119.59	0.00	334.67	0.09	0.29	109.20
0.28	109.20								
SWR-5			5663.38	9043.01	0.00	334.67	0.07	0.29	109.20
0.28	109.20								
SWR-6			5671.21	9154.63	0.00	334.67	0.07	0.29	109.20
0.28	109.20								

Node Depth Summary

Final	Final		Total	Total	Maximum	Average	Average	
Upper	Water		Lower	Lateral	Lateral	Upper	Water	
Moist.	Table		Seepage	Outflow	Outflow	Moist.	Table	
m	Subcatchment		mm	mm	mm	CMS	m	
	BLCK-10	17926.91	11441.11	0.00	16758.83	1.17	0.41	109.20
0.42	109.20							
	BLCK-11	19578.67	11935.39	0.00	9592.70	1.40	0.27	107.52
0.29	107.52							
	BLCK-12	19719.60	11972.65	0.01	9099.19	1.51	0.23	106.76
0.26	106.76							
	BLCK-2	19649.87	11954.98	0.00	9232.54	1.08	0.25	107.08
0.27	107.08							
	BLCK-2R	19718.03	11973.08	0.01	9077.43	0.15	0.23	106.60
0.25	106.60							
	BLCK-3	18131.88	11483.77	0.00	13651.64	0.72	0.38	108.97
0.39	108.97							
	BLCK-3R	19434.46	11898.27	0.00	10491.14	0.46	0.30	108.17
0.32	108.17							
	BLCK-4	18092.68	11478.87	0.00	17065.23	0.47	0.41	109.20
0.42	109.20							
	BLCK-4R	17946.93	12102.07	0.00	16842.97	2.20	0.41	109.20
0.42	109.20							
	BLCK-5	18001.12	11457.75	0.00	16930.80	0.49	0.41	109.20
0.42	109.20							
	BLCK-5R	18299.51	12585.10	0.00	17632.46	0.85	0.41	109.20
0.42	109.20							
	BLCK-6	18037.52	11466.38	0.00	17081.56	0.48	0.41	109.20
0.42	109.20							
	BLCK-6R	17824.19	12576.25	0.00	16664.73	0.78	0.41	109.20
0.42	109.20							
	BLCK-7	19595.79	11940.20	0.01	9663.30	2.72	0.26	107.41
0.29	107.41							
	BLCK-7R	19960.08	22851.57	0.00	557.14	0.28	0.34	109.20
0.42	109.20							
	BLCK-8	19746.50	11978.94	0.01	9073.32	1.32	0.23	106.60
0.25	106.60							
	BLCK-9	17927.73	11435.85	0.00	15121.43	1.12	0.40	109.11
0.40	109.11							
	EX-1	20598.84	18570.93	0.01	3562.53	7.22	0.19	106.60
0.21	106.60							
	EX-2	18978.59	19915.15	0.01	1764.52	1.92	0.10	106.60
0.07	106.60							
	EX-3	16978.10	15566.66	0.00	3133.49	2.37	0.18	106.60
0.19	106.60							
	S1	7376.16	8441.76	0.00	1284.82	0.23	0.09	107.00
0.09	107.00							
	S10	6211.05	7475.36	0.00	334.67	0.06	0.29	109.20
0.29	109.20							
	S11	5940.15	7191.39	0.00	334.67	0.06	0.29	109.20
0.29	109.20							
	S12	6216.61	7444.54	0.00	334.67	0.07	0.29	109.20
0.29	109.20							
	S13	6184.19	7431.43	0.00	334.67	0.07	0.29	109.20
0.29	109.20							
	S14	7580.19	8687.79	0.01	1456.09	0.29	0.06	106.62
0.05	106.62							
	S15	7047.11	8024.69	0.01	1293.26	0.12	0.09	106.93
0.08	106.93							
	S16	7566.37	8737.32	0.01	1483.49	0.19	0.06	106.60
0.05	106.60							

Node	Type	Average Depth Meters	Maximum Depth Meters	Maximum HGL Meters	Time of Occurrence days hr:min	Max Reported Max Depth Meters
J1	JUNCTION	0.00	0.12	114.57	10352 15:00	0.12
J10	JUNCTION	0.00	0.00	113.00	0 00:00	0.00
J11	JUNCTION	0.00	0.36	114.31	10352 15:01	0.36
J12	JUNCTION	0.01	0.38	114.27	10352 15:01	0.38
J13	JUNCTION	0.00	0.00	114.33	0 00:00	0.00
J14	JUNCTION	0.00	0.23	114.15	10352 15:01	0.23
J15	JUNCTION	0.00	0.41	113.97	10352 15:03	0.41
J16	JUNCTION	0.01	0.60	113.96	10352 15:03	0.60
J17	JUNCTION	0.00	0.66	113.96	10352 15:03	0.66
J18	JUNCTION	0.01	0.59	114.00	10352 15:02	0.59
J19	JUNCTION	0.00	0.49	114.17	10352 15:01	0.49
J2	JUNCTION	0.01	0.57	110.72	16232 14:16	0.57
J20	JUNCTION	0.00	0.30	114.15	10352 15:01	0.30
J21	JUNCTION	0.00	0.44	114.79	16232 14:00	0.44
J22	JUNCTION	0.00	0.44	114.04	16232 14:02	0.44
J23	JUNCTION	0.01	0.50	113.91	10352 15:02	0.50
J24	JUNCTION	0.01	0.46	111.64	10352 15:02	0.46
J25	JUNCTION	0.01	0.48	113.92	10352 15:01	0.48
J26	JUNCTION	0.00	0.41	114.07	10352 15:01	0.41
J27	JUNCTION	0.00	0.22	112.94	10352 15:01	0.22
J28	JUNCTION	0.00	0.23	112.68	10352 15:03	0.23
J3	JUNCTION	0.00	0.00	114.92	0 00:00	0.00
J30	JUNCTION	0.01	0.41	112.31	10352 15:01	0.41
J31	JUNCTION	0.01	0.41	111.82	10352 15:03	0.41
J32	JUNCTION	0.01	0.51	111.64	10352 15:02	0.51

Storage Volume Summary

Maximum	Average	Avg	Evap	Exfil	Maximum	Max	Time of Max
Outflow	Volume	Pent	Pent	Pent	Volume	Pent	Occurrence
Storage Unit	1000 m³	Full	Loss	Loss	1000 m³	Full	days hr:min
St_BLK-10	0.000	0.0	0.0	0.0	0.001	0.6	10352
15:01 0.105							
St_BLK-11	0.000	0.0	0.0	0.0	0.000	0.5	10352
15:01 0.103							
St_BLK-12	0.000	0.0	0.0	0.0	0.000	0.5	10352
15:01 0.102							
St_BLK-2	0.000	0.0	0.0	0.0	0.001	1.0	10352
15:01 0.075							
St_BLK-2R	0.000	0.0	0.0	0.0	0.000	1.0	10352
15:01 0.010							
St_BLK-3	0.000	0.0	0.0	0.0	0.001	1.2	10352
15:01 0.063							
St_BLK-3R	0.000	0.0	0.0	0.0	0.000	1.1	10352
15:01 0.036							
St_BLK-4	0.000	0.0	0.0	0.0	0.000	0.6	10352
15:01 0.042							
St_BLK-4R	0.000	0.0	0.0	0.0	0.002	1.3	10352
15:01 0.198							
St_BLK-5	0.000	0.0	0.0	0.0	0.000	0.6	10352
15:01 0.044							
St_BLK-5R	0.000	0.0	0.0	0.0	0.001	1.3	10352
15:01 0.076							
St_BLK-6	0.000	0.0	0.0	0.0	0.000	0.6	10352
15:01 0.043							
St_BLK-6R	0.000	0.0	0.0	0.0	0.001	1.3	10352
15:01 0.071							
St_BLK-7	0.000	0.0	0.0	0.0	0.001	0.5	10352
15:01 0.196							
St_BLK-8	0.000	0.0	0.0	0.0	0.000	0.5	10352
15:01 0.088							
St_BLK-9	0.000	0.0	0.0	0.0	0.001	0.6	10352
15:01 0.100							
SWM_Facility	0.010	0.1	0.0	0.0	7.975	79.1	16232
14:17 1.327							

Swale-9	CONDUIT	0.268	10352	15:01	0.45	0.06	0.37
Swale-RY1_1	CONDUIT	0.000	0	00:00	0.00	0.00	0.15
Swale-RY1_2	CONDUIT	0.015	10352	15:02	0.17	0.02	0.34
Swale-RY2	CONDUIT	0.051	10352	15:01	0.35	0.07	0.38
Swale-RY3	CONDUIT	0.056	10352	15:03	0.19	0.08	0.53
Swale-RY4	CONDUIT	0.260	10352	15:01	0.52	0.36	0.68
Swale-RY5	CONDUIT	0.264	10352	15:03	0.42	0.36	0.76
Swale-RY6	CONDUIT	0.343	10352	15:01	0.66	0.47	0.70
OR1	ORIFICE	0.055	16232	15:17			1.00
OR2	ORIFICE	0.899	16232	14:17			1.00
W1	WEIR	0.373	16232	14:17			0.46
O_BLK-10	DUMMY	0.105	10352	15:01			
O_BLK-11	DUMMY	0.103	10352	15:01			
O_BLK-12	DUMMY	0.102	10352	15:01			
O_BLK-2	DUMMY	0.075	10352	15:01			
O_BLK-2R	DUMMY	0.010	10352	15:01			
O_BLK-3	DUMMY	0.063	10352	15:01			
O_BLK-4	DUMMY	0.042	10352	15:01			
O_BLK-5	DUMMY	0.044	10352	15:01			
O_BLK-5R	DUMMY	0.076	10352	15:01			
O_BLK-6	DUMMY	0.043	10352	15:01			
O_BLK-6R	DUMMY	0.071	10352	15:01			
O_BLK-7	DUMMY	0.196	10352	15:01			
O_BLK-8	DUMMY	0.088	10352	15:01			
O_BLK-9	DUMMY	0.100	10352	15:01			
O_St_BLK-3R	DUMMY	0.036	10352	15:01			
O_St_BLK-4R	DUMMY	0.198	10352	15:01			

Flow Classification Summary

Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class							
		Dry	Dry	Up	Down	Sub	Sup	Up	Down
		Dry	Crit	Crit	Crit	Crit	Crit	Norm	Inlet
C3	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
CULV-1	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
Ditch-2	1.00	0.12	0.85	0.00	0.03	0.00	0.00	0.00	1.00
Ditch-3	1.00	0.12	0.00	0.00	0.88	0.00	0.00	0.00	0.62
Swale-1	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00

Outfall Loading Summary

Outfall Node	Flow Freq Pent	Avg Flow CMS	Max Flow CMS	Total Volume 10 ⁶ ltr
CARP	98.44	0.002	32.968	2613.905
OF2	22.84	0.002	1.422	908.968
System	60.64	0.004	32.968	3522.873

Link Flow Summary

Link	Type	Maximum Flow CMS	Time of Max Occurrence days hr:min	Maximum Veloc m/sec	Max/ Full Flow	Max/ Full Depth
C3	CONDUIT	0.418	10352 15:01	1.28	0.03	0.28
CULV-1	CONDUIT	0.642	10352 15:03	1.76	2.39	0.77
Ditch-2	CONDUIT	0.139	10352 15:00	0.45	0.01	0.33
Ditch-3	CHANNEL	1.422	16232 14:16	1.01	0.41	0.68
Swale-1	CONDUIT	0.000	0 00:00	0.00	0.00	0.11
Swale-10	CONDUIT	0.520	10352 15:01	0.56	0.11	0.52
Swale-10A	CONDUIT	0.141	10352 15:10	0.21	0.03	0.52
Swale-11	CONDUIT	0.316	10352 15:01	0.70	0.07	0.32
Swale-11A	CONDUIT	0.413	10352 15:02	0.79	0.09	0.35
Swale-12	CONDUIT	0.123	10352 15:05	0.22	0.03	0.42
Swale-13	CONDUIT	0.329	16232 14:02	0.49	0.07	0.39
Swale-14	CONDUIT	0.317	16232 14:00	0.54	0.07	0.37
Swale-15	CONDUIT	0.115	10352 15:01	0.40	0.02	0.29
Swale-15A	CONDUIT	0.018	10352 15:08	0.23	0.00	0.22
Swale-16	CONDUIT	0.000	0 00:00	0.00	0.00	0.10
Swale-17	CONDUIT	1.562	10352 15:02	2.44	0.08	0.38
Swale-2	CONDUIT	0.173	10352 15:00	0.43	0.04	0.32
Swale-3	CONDUIT	0.091	10352 15:01	0.39	0.02	0.23
Swale-4	CONDUIT	0.290	10352 15:01	0.53	0.06	0.35
Swale-5	CONDUIT	0.098	10352 15:02	0.32	0.02	0.27
Swale-5A	CONDUIT	0.168	10352 15:01	0.41	0.04	0.31
Swale-6	CONDUIT	0.296	10352 15:02	0.53	0.06	0.36
Swale-6A	CONDUIT	0.308	10352 15:03	0.48	0.07	0.38
Swale-7	CONDUIT	0.217	10352 15:01	0.46	0.05	0.33
Swale-8	CONDUIT	0.419	10352 15:01	0.49	0.09	0.45

Swale-10	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.06	0.00
Swale-10A	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.11	0.00
Swale-11	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Swale-11A	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Swale-12	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
Swale-13	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
Swale-14	1.00	0.00	0.89	0.00	0.11	0.00	0.00	0.00	0.98	0.00
Swale-15	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.52	0.00
Swale-15A	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.97	0.00
Swale-16	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Swale-17	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Swale-2	1.00	0.00	0.79	0.00	0.21	0.00	0.00	0.00	1.00	0.00
Swale-3	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
Swale-4	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.77	0.00
Swale-5	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.71	0.00
Swale-5A	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
Swale-6	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.94	0.00
Swale-6A	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.77	0.00
Swale-7	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.77	0.00
Swale-8	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
Swale-9	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
Swale-RY1_1	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Swale-RY1_2	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.75	0.00
Swale-RY2	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.76	0.00
Swale-RY3	1.00	0.00	0.02	0.00	0.98	0.00	0.00	0.00	0.78	0.00
Swale-RY4	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
Swale-RY5	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.75	0.00
Swale-RY6	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.71	0.00

Conduit Surcharge Summary

Conduit	Hours Full			Hours	Hours
	Both Ends	Upstream	Dnstream	Above Full Normal Flow	Capacity Limited
CULV-1	0.01	0.01	0.01	8.01	0.01

Analysis begun on: Tue Mar 4 09:46:19 2025
Analysis ended on: Wed Mar 5 13:29:47 2025
Total elapsed time: 1.03:43:28